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A BRIEF HISTORY OF FIRE HOSE SPECIFICATIONS.

IT is the opinion of many that if there is any monopoly or combination of capital now existing in restraint of trade it is the so-called fire insurance trust, as exemplified by its attitude towards the manufacturers of fire department hose.

That which more directly concerns our readers, however, is the attitude of the insurance laboratory theorists towards fire departments and manufacturers of fire department equipment. The manufacturers of fire hose, for instance, some thirty-two in number, have been protesting against the threatened complete domination of these insurance autocrats for the past three years. Their demands being unreasonable and their methods arbitrary, the great majority of the fire hose manufacturers declare that they will continue to stand out against the exactions of these self-appointed censors.

For the sake of argument let us admit that a few, say 10 per cent., of the fire departments of the United States have in the past, for economical reasons, purchased hose of a weight, quality or character not adequate or good enough for their needs, and let us also admit that the large interests of the insurance companies entitle them to respectful consideration. The agitation against poor hose was started by fire department officials in some of our largest cities, which, through false economy and in deference to public clamor, had bought cheap hose in the past. The insurance companies through their laboratories, without consulting reliable authorities on rubber compounding, plunged headlong into the controversy by formulating a set of specifications covering the construction of fire hose which they sent to leading fire chiefs, asking their opinion of them. Those familiar with the elementary principles of hose construction did not take these specifications seriously, others condemned them, but some were led to believe that these had been already established as standard. These specifications contained many incongruities and their circulation created a temporary condition of demoralization in the minds of the manufacturers and fire engineers alike.

A committee representing every fire hose manufacturer in the United States called upon the insurance interest, protesting and seeking some friendly co-operation. They yielded in a way by appointing a meeting with their hose committee. The manufacturers' committee sought to show the insurance committee that it would be impossible to draw specifications covering the construction of fire hose which would obtain for the fire service the best products of the American factories, as now represented by the highest quality brands of the various makers. But it was agreed that minimum specifications for laboratory guidance and standardizing, as a basis of agreement, were possible and desirable and the manufacturers would welcome an alliance with the insurance interest. It was soon manifest to the rubber manufacturers at the first meeting of this joint committee that the insurance members expected by virtue of the power behind them to ride down all opposition to their plan of domination. What appeared then as sane judgment, but later proved to be fox craft, prevailed, and the manufacturers' committee proposed to continue the conference with the distinct understanding that whatever specifications should be compiled would be for use in the laboratories only, and not published or circulated for advertising purposes. It was so agreed. (The laboratory specifications which were the outcome of this agreement were afterwards promulgated—notwithstanding the agreement—by the insurance laboratories.) The manufacturers' committee continued this conference with the insurance committee for the purpose of formulating minimum specifications for fire hose, not to be published but to be used only

as a laboratory standard. The so-called "National Standard Specifications" were the outcome of these conferences.

With this theoretically good fire hose quality established by these specifications, ways and means of preventing the manufacture and sale of hose inferior to the established minimum were next considered. The insurance committee demanded that their laboratory should furnish and attach to each section of hose a label at a cost of 25 cents per label to show that the hose was approved and in accordance with the specifications. The manufacturers argued that to do this they would bring down to one minimum level all brands of the better class of fire hose, as the label would not show that the hose to which it was attached was in any respect better than the specification requirements, and would eliminate all incentive to improve quality in the future. For these reasons, which must be apparent to any unprejudiced mind, the manufacturers could not agree to this proposition, and such was the unanimous opinion, and it was so unanimously voted.

The manufacturers in order to show their integrity of purpose submitted the following plan:

Each and every manufacturer of fire hose was to send to the Chicago laboratories of the insurance companies a section of each and every brand of fire hose manufactured by him or his company, guaranteed to be at least within the specifications proposed as a standard. The laboratory would upon testing, and finding said sections of hose to be at least within the specifications, at once register and approve each brand. By this means it was hoped to establish a long list of brands of fire hose, not one of which would be theoretically poor from the laboratory standpoint, and leaving the field open for competition in quality, which would otherwise be prevented by the use of one standard specification quality.

As part of the proposed plan of registering brands, the manufacturers even went so far as to agree to furnish the insurance laboratories with a list of their sales of fire department hose each month, with the understanding that they might send representatives to any city or town to which hose had been shipped, and there test it; and should any be found inferior to the specification standard, and not strictly in accordance with the sample on which the brand was approved and registered, that the approval should be withdrawn, the name of this particular brand and manufacturer stricken from the list, after a trial by a committee consisting of one expert chemist appointed by the manufacturers' association, one by the insurance laboratories, and the third by a joint selection.

All these overtures on the part of the manufacturers were finally turned down by the insurance companies, the specifications which were compiled by the manufacturers confiscated and promulgated; and they are now endeavoring to force their adoption by the manufacturers and fire departments as the one standard for fire department hose.

The manufacturers resent the accusation made by the insurance companies that their standard brands of fire hose had deteriorated in quality. They maintain, and stand ready to prove, that the quality of their best products has been improved from year to year, as experience and facilities for manufacturing have advanced.

The rubber manufacturers were the creators of the present type of fire hose. It took them years to supplant the cumbersome leather article. They have kept pace with fire needs wonderfully. That the last word has been said in fire hose improvement they deny. Nor do they propose to allow any interests to handicap them in further progress.

A LITTLE LIGHT ON TIRE ADVERTISING.

AN advertising agency, which has special facilities for informing itself regarding the advertising being done and being planned by the tire manufacturers, has furnished us with a list of ten of the leading tire makers, together with the amount of their advertising appropriation for the current year. These appropriations range from $20,000 to $450,000. One company is spending this large sum; one other appropriated for the year $350,000; two others $250,000 each, and two others $100,000 each. The aggregate advertising appropriations for these ten companies amount to $1,666,000—a very substantial sum certainly. And yet this represents the advertising outlay of only ten companies; and this list, while to be sure it includes most of the large companies, does not include them all. It would undoubtedly be safe to say that American tire manufacturers all together are spending this year at least $2,500,000 in advertising. This is about 2 per cent. of their gross receipts from tires, so that while the amount seems large, considered on the basis of percentage of the business done, it is not at all extravagant.

SHIPPING RUBBER DIRECT TO NEW YORK.

IN the exceedingly interesting addresses made by Mr. Crosbie-Roles and Mr. C. E. S. Baxendale, at the banquet held at the Hotel Plaza at the conclusion of

the recent rubber show—which were reported in our November issue—a good deal of stress was laid upon the desirability of having rubber shipments from the Middle East come direct to New York rather than having them go, as now, to London, Liverpool, or some continental point, to be re-shipped in new packages. This matter was given quite an extended mention in Mr. Baxendale's report to the Planters' Association of Malaya, written at the conclusion of the rubber show—an abstract of which appears in this issue.

Special emphasis was laid upon the two great disadvantages in the present system of shipment to Europe and re-shipment to New York; namely, that the identity of the rubber was largely lost, as it came to New York in mixed packages; and further that the repacking was often carelessly done, resulting in the receipt of the rubber at this port in very much poorer condition than would have been the case if it had been shipped direct. In Mr. Baxendale's report he speaks of a New York importer who showed him a small parcel of plantation rubber containing a most heterogeneous mixture of crêpe of every conceivable shade.

There is no sound reason whatever for this unnecessary handling of plantation rubber on its way to New York. It is attributable simply to the fact that until within the last three or four years plantation rubber had not assumed very considerable proportions, so that New York importers had not given it serious consideration. But that situation is now changed. In 1911 New York imported 6,590 tons of plantation rubber, and in the first eight months of the present year these imports had increased to over 8,000 tons; and with the very rapid increase in plantation production —which in 1912 will easily double the output of 1911—this question assumes a condition of such importance, that it is hardly credible that the present system will be much longer continued.

Considering the fact that America is using three and a half times as much rubber as England, three times as much as Germany, and five times as much as France, there hardly seems any reason why crude rubber should be shipped to any port in any of those countries to be re-shipped from that point to this great center of consumption. Moreover, the present outlook is that America's proportionate consumption of rubber will still further increase. The automobile manufacturers are planning a production of 600,000 cars for 1913, which, with the cars which will be in use from the product of earlier years, will make a total number certainly in excess of 1,000,000, and it is a conservative estimate to place the necessary tire production for 1913 at 5,000,000 tires. There seems to be no good reason, therefore, why the present indirect and wasteful shipment of plantation rubber to New York should be continued. Direct shipments mean expedition and economy, and they would enable American manufacturers to get what the plantation ships them, and not some indiscriminate mixture concocted in Europe.

ENGLISH MANUFACTURERS ALARMED.

NEWS comes across the water that the English manufacturers of automobiles are greatly alarmed over the large and constantly increasing number of low and medium-priced American cars which are being sold to the people living on that island. It is stated that at a recent conference, 15 or 20 of these manufacturers met and agreed to organize a company with a capital of $25,000,000, to manufacture inexpensive cars to meet this American competition.

It is quite likely that their fears are not groundless, because the low-priced car has proved exceedingly attractive in this country, and would naturally make the same appeal to people on the other side. The Ford company, whose product is of the less expensive sort, are said to be manufacturing at a rate that will bring their production for the present year up to 75,000 cars, and it is further stated that they are making plans to increase this voluminous output to something like 200,000 for the coming year. And other makers of low and medium-priced cars are rapidly increasing their production facilities; so that the number of cars of this class likely to invade England during the coming year will greatly exceed those of any previous invasion.

Two methods are suggested by the English for meeting these inroads on their trade—first, as stated above, the formation of a large corporation in which many of them are to be jointly interested for manufacturing cars of low cost; and, second, an appeal to the government to put a prohibitive tariff on American automobiles. Neither move is likely to be very effective. Obviously, if English manufacturers could compete in this department of automobile production profitably, they would naturally embark upon it without waiting for the organization of any combination; and if they cannot compete profitably by in-

dividual effort, they hardly will be able to by any concerted effort; as agreements of this character, entered into by competitors in any line of work, are never likely to be permanently satisfactory or efficient.

The second contingency—the levying of prohibitive duties on low-priced American cars is hardly likely to appeal to the Government, in a country like England, that has so long prided itself on its freedom of trade.

COMPELLING THE PRESS TO SHOW ITS HAND.

THERE seems to be some opposition to the Federal regulations that recently became operative, requiring publicity in regard to the ownership of newspapers and other periodicals. The act went into effect last August and specifies that a sworn statement shall be made twice a year, filed with the Post-Office Department, and also printed in the publication itself, giving the names and addresses of all the officers, the name or names of the owners, and—where the publishing company is a corporation—a list of all stockholders holding over one per cent. of the stock; together with the names of all those who hold mortgages or other liens upon the publication.

At a convention of the Illinois Daily Newspaper Association, held late in November, in Chicago, the following resolution was unanimously adopted:

"Resolved, That this association views with disapproval the growing tendency of the United States Government toward paternalism in matters pertaining to the press, and condemns the new law requiring publicity in matters in no wise concerning the general public."

But, is the association right about this matter? Is it a fact that the general public is in no wise concerned with the ownership and control of the daily press and other publications? The daily press in particular exerts an incalculable influence in this country. Is it not eminently proper that the public should know who is back of this influence? The press constitutes the greatest power existing in this country today. Is it not wise and salutary that the public should know who is exercising this power?

If a man owns an automobile he is compelled to register that ownership and mark the car in such a way that this ownership can be easily identified. That is because the automobile, while a very useful device, is recognized as possessing a certain capacity for doing harm. Should the press, which possesses a power for doing evil (it is conceded, of course, that this great power is usually exercised for good) which is immeasurably greater, be allowed to hide under the cloak of anonymity?

There should be no diminution of the power of the press. Its freedom of expression is one of the safeguards of a republic; but freedom of expression should not mean freedom from responsibility. Those who control the press and direct its activities should stand in the open. The Illinois Association is wrong when it says that these matters in no wise concern the general public. There is nothing that concerns the general public more.

RESTRICTING GENERAL EXPOSITIONS.

AT the Exposition Congress recently held in Berlin, an international agreement was signed restricting in future general expositions—usually referred to as "World's Fairs"—to intervals of three years, and establishing an interval of ten years between two general expositions in the same country.

These regulations seem sane and reasonable, for too great frequency in the holding of world's fairs must, almost inevitably, mean improper preparation for these events, with disappointing results; and even where the results are not disappointing, too many expositions are likely to pall upon public appreciation. The great world's fair to be held in San Francisco in celebration of the opening of the Panama Canal has substantial warrant. In the first place, more than ten years will have elapsed since the fair at St. Louis, and in addition to that fact this will be the first great international exposition ever held in the western half of the United States, and the occasion which it will celebrate is one of the epochal events in the world's history.

The strictures that properly are brought against frequent general expositions do not apply to trade expositions, where in some industries it is found, not only interesting, but highly profitable to have an exhibition every year; in fact, to hold several of them each season in different parts of the country, as in the automobile trade. In England it has been found conducive to the welfare of the trade to have rubber expositions once in three years. It is quite possible that such a plan would prove beneficial to the trade in this country also. In any event, not a few of the exhibitors who took part in the recent New York show expressed a desire to try it over again.

IT IS AN ANCIENT SAYING IN THE rubber footwear trade that "one early snow-storm is worth two late ones"; and experience has shown this to be quite true. When snow appears in noticeable volume in November, people say "We are in for a hard winter," and they start for the shoe store to get rubber boots and arctics. When snow holds off until February, these same people remark "Winter is about over, we will make our old rubbers do." Therefore the rubber footwear men were particularly fervent this year on Thanksgiving Day—with much of the country under a foot of snow.

India Rubber and Wireless Telegraphy.

A FEW years ago when the steamship "Republic" was run into and sunk off our coast, we got our first idea on a large scale of the usefulness of wireless telegraphy. Most of us can recall the manner in which Jack Binns stuck to his post on the sinking liner and sent his aerial calls for aid which fortunately brought succor in ample time. Then we realized something of the human benefits of Marconi's splendid work. That accident led to a broader adoption of wireless installations for sea-going passenger craft, and it also served to emphasize some of the limitations of the apparatus then in commercial service. It was well that such was the case, because there was another and still more disastrous accident yet to come, before the full significance and the need of the universal adoption of this means of communication at sea could be made plain. Even now, the mere mention of the ill-fated "Titanic" fills us with a sense of awe. But out of that dreadful catastrophe survives the story of Phillips' splendid heroism as he stuck to his wireless instrument until the moment of her final plunge—calling incessantly to his fellow operators far spread upon the darkened sea and asking that they hasten their captains with aid. But for those Hertzian waves that bore to the remote ships this message of need, the loss of life would probably have been still greater.

To the dealer in and the manufacturer of rubber it must be a source of interest, if not pride, that caoutchouc plays no inconspicuous part in the setting and the contributive equipment of the best of these wireless apparatus. Thanks to the courtesy of the Marconi company, we have been able to visit one of their local stations. Of course, we do not want to convey the idea that India rubber is an integral part of the dispatching or the receiving instruments so far as the wireless functions are concerned. India rubber merely serves to safeguard these operations, and in doing this to contribute to their efficiency. Insulation of the best is an absolute necessity in this department of electrical science: a necessity in carrying the dispatching impulses to the towering aerials without loss of energy through leakage, and still more necessary in preventing the

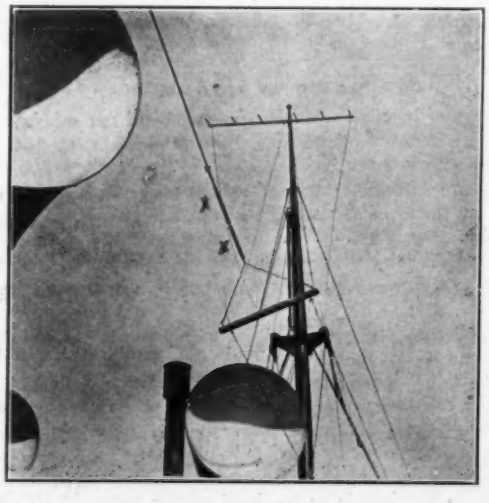


FIG. 1. SHOWING HARD RUBBER INSULATORS.

diminishing wave-force of a sending station far away from being further impaired as it travels down the waiting wires to the delicate receiver. Leakage in the first case means a restricted zone for the dispatched message; leakage in the second case might render a call for help futile.

Only the best of insulation will answer, and so far nothing

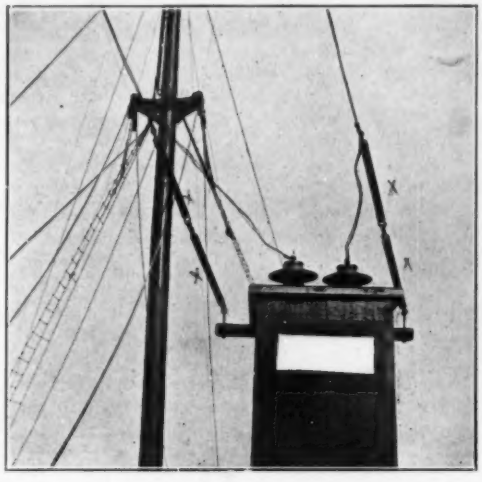


FIG. 2. SHOWING HARD RUBBER INSULATORS.

has been found equal to either hard or soft rubber for the various applications to which they are put. From the time the Hertzian waves reach the antennae 'way up in the air with their arriving message until they transmit their feeble impulses in faint ticks to the sensitive receiver, and thence to the operator by means of microphonic ear-pieces of a telephone, hard and soft rubber play a frequent part in the get-up of the apparatus and its installation. It would only confuse the average person to have these several parts designated by their technical names, and to the rubber man it will probably suffice to know that his commodity is so essential to this development of modern wizardry. What will also be a source of satisfaction to the trade and the manufacturer is that every advance in wireless and every broadening of its application, but serves to increase the demand for rubber.

Substantially every United States naval vessel, including most of the submarines, now carry wireless equipments, and this means of long-range communication has become an indispensable factor in the management of our fleets and squadrons upon the sea. It will undoubtedly prove of vital importance in the massing of our forces and the skilful interception of our enemies in the next great naval battle—if we have one. It was used by the Japanese and Russians during their recent struggle, but unfortunately for the Czar's fleet, the Japanese knew their enemy's code, and were able to intercept those confidential messages. Since then, however, the wireless expert has developed a system of "tuning"—really regulating the length of the Hertzian wave, and by this means the receiving instruments are made receptive only to the proper or prescribed impulses. This is getting somewhat into the technicalities of the science, but it only shows how one achievement leads to another.

Perhaps the most astonishing advances in wireless have been in the direction of securing greater range. Where it used to be a matter of less than fifty miles a few years ago, it is now possible to send Hertzian waves over a zone of several thousand miles in diameter, and to make these impulses so definite that the signals can be picked up and read distinctly at those

ranges. A splendid proof of this was given shortly after the loss of the "Titanic," when we sent to the mid-Atlantic two of our naval scout cruisers for the purpose of patroling the area near the steamship lanes upon which dangerous icebergs wandered south. These ships, the "Birmingham" and "Chester" alternated in this duty, and by means of their powerful apparatus, were able to send daily warnings to the far northern coast of this continent whence the news was relayed to our hydrographic office for distribution among our Atlantic ports. There is no telling how many lives and tons of shipping were thus saved from needless peril.

As an outcome of the "Titanic" catastrophe, Congress has recently passed a rigid law prescribing the more general installing of wireless equipments upon all sea-going passenger vessels. It will be necessary for every ship to carry at least two operators and to have an auxiliary apparatus which will be available for service in case of failure of the regular outfit. This will mean still more rubber. But Congress went further than this: while the foregoing provision went into effect upon the first of October of this year, another requirement of the same law is that even freight vessels, after the first of next July, shall also be provided with wireless. The reason for this is plain, quite apart from the immediate protection of the vessels concerned: freighters are quite able to render assistance and to be of material aid to a damaged ocean greyhound, and by substantially compelling all ocean-going craft to carry this means of communication, the chance of detecting danger and giving prompt warning to others is thus correspondingly bettered.

Figures 1 and 2 illustrate the application of hard rubber insulators (marked X in the cuts) in the aerials of wireless telegraphy. In order to keep these insulators in a more efficient condition, they have to be coated at least once a month with vaseline. This makes them shed water better and keeps the surface of the rubber from becoming coated with carbon from smoke. Either water or carbon would constitute electrical conductors and, to that extent, neutralize the insulation.

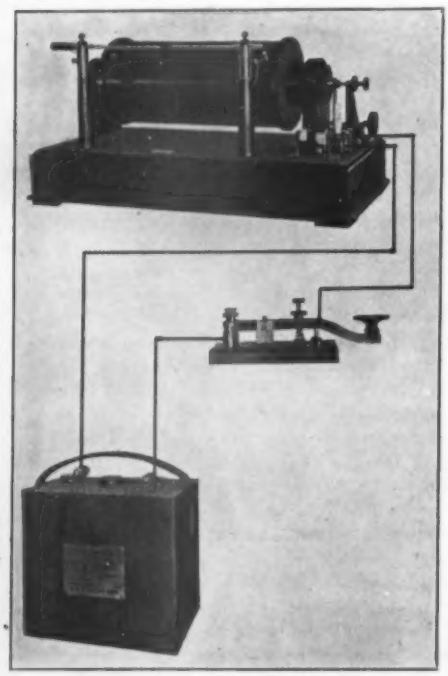


FIG. 3. THE AUXILIARY WIRELESS OUTFIT.

FIG. 4. WEATHER PROTECTED INSULATOR WITH RAIN CONE.

On the 23rd of July the President of the United States signed a bill making it mandatory that all vessels carrying fifty passengers and upward should be equipped with an auxiliary wireless outfit to do duty in case the prime installation should fail. Sixty days were allowed to accomplish this innovation, which involved the making of quite 250 auxiliary sets and their delivery to the various vessels. The Marconi Company accomplished this by working its manufacturing plant night and day and calling into service two other establishments. This involved an expenditure of substantially a quarter of a million of dollars, and many of the instruments were delivered by express rather than by freight in order that they could reach their destination and be ready for service inside of the time limit set by Congress. The law was for the better protection of the public in transit upon the sea, and the Marconi Company made every effort to facilitate subscribing to this law.

The auxiliary set, shown in Figure 3, draws generously upon the rubber trade for its get-up—the cylinder, the two prominent upright posts, and much of the apparatus on the right above the box being made of hard rubber. The storage battery is also held within a hard-rubber box.

Figure 4 shows a form of weather-protected insulator showing the hard-rubber tube passing from the rain cone through the top of the operating house or station.

A RUBBER PIPE MAKES DIVING EASY.

ANYONE who has a *penchant* for diving can now follow his inclination without cumbering himself with a helmet to go over his head and a heavy suit to cover the body, for an inventive genius connected with the French navy has recently given a demonstration of a simple diving device which he has invented. It consists of a mouth-piece kept in place by a teeth-grip and by a rubber band going around the head. This mouth-piece, which is not more than 10 or 12 inches long, and small in its other dimensions, is connected with a rubber pipe of any length that the diving operations may necessitate, at the other end of which is an air pump, such as is used to inflate auto tires. The sailor who gave the original demonstration walked into the Seine and disappeared into its depths; an operator kept the air pump in motion so as to supply the diver with the necessary amount of air, and air bubbles along the surface of the river showed what progress the subaqueous perambulator was making. This mouth-piece is so constructed that the diver's exhalations are not interfered with, while his inhalations are amply provided for by the pipe and the air pump.

A RUBBER LIFEBOAT.

SINCE the horrible *Titanic* disaster hundreds of inventive minds—we might say, with just as much accuracy, thousands of inventive minds—have been busy on the lifeboat question, which is natural enough, considering the impressive way in which the lesson of the need of life boats was taught—not only to the steamship companies, but to the traveling public. Among the results of all this inventive application there is one device invented by a Jerseyman which is particularly interesting to rubber men, as it is an all-rubber boat. The frame is made of hard rubber and over this frame, both outside and inside, are laid sheets of tough rubber cloth. The frame is fairly thick, leaving air chambers in the open places which are inflated. This gives the boat buoyancy and at the same time makes practically the whole boat a pneumatic buffer in case it comes in contact with any other object. The boat can be made of any size.

On first thought it would appear that a wooden frame would be quite as serviceable as the hard rubber frame. The efficacy of the boat lies in its double rubber covering with the intervening air chambers.

A BOOK for everybody interested in tires "Rubber Tires and All About Them"—this office.

A MODEL CALENDER ROOM.

By Morris A. Pearson.

IN preparing this article on this important subject, the writer has dealt solely with the mechanical side of the question. During the past ten years, he has had an excellent opportunity to study the mechanical details of a great majority of the important installations in this country, and has incorporated in this article the most desirable features, as well as a few new ideas.

The general layout of the room, as shown, is practically the same as one recently installed by a large rubber factory in the Middle West, though it differs materially in many details. The various mechanical features, however, are applicable to almost any sized installation.

The room is 75 feet wide by 150 feet long, with a 1½-inch maple floor laid on concrete. On either side of the room is located a line of six mills with rolls 20-inch diameter by 60-inch face. Each line is driven by a 300 horsepower motor, with reducing gear, located midway between the mills, there being three on each side of the drive. Located between the mill lines, are twelve 3-roll calenders, with rolls 24-inch diameter by 66-inch face, and equipped with individual motor drives. A central passageway, 8 feet wide, extends the whole length of the room.

MILL LINE DETAILS.

The original drive for the mill line consisted of a motor, directly connected with the line shaft, running at about 100 r. p. m. The size of the motor, to give the power required at this slow motor speed, necessitated a pit in the floor about 17 feet by 14 feet by 3½ feet deep.

The drive shown here is one of recent design and has the motor located directly over the line shaft, where it is easily accessible. The power is transmitted from the motor to the line shaft by cut double helical gears enclosed in oil-tight casings. Automatic lubrication is provided by means of an oil pump, connected with the lower part of the casing, which delivers the oil to the gears directly at the point where needed. Gearing of the cut double helical type is far superior to spur gearing, in that it allows a more compact design and reduces vibration, wear and noise to a minimum. The only part of the drive to extend below the floor is the lower part of the gear casing.

The motor is connected with the reducing gear by a magnetic coupling, providing for a safety stop, which is absolutely instantaneous and which can be operated by hand or foot trips from any mill on the line. A magnetic brake, used in connection with this coupling, is automatically applied when the coupling is cut off. The power required for energizing a 300 horsepower magnetic coupling is only 2 amperes at 120 volts, and for the brake 1.75 amperes at 120 volts—both continuously. It will thus be seen that the operating cost is comparatively nothing.

All line shafting is 6⅜-inch diameter, providing for duplicate pinions and bearings throughout. It is located high enough to allow everything connected with the mill line to clear the floor.

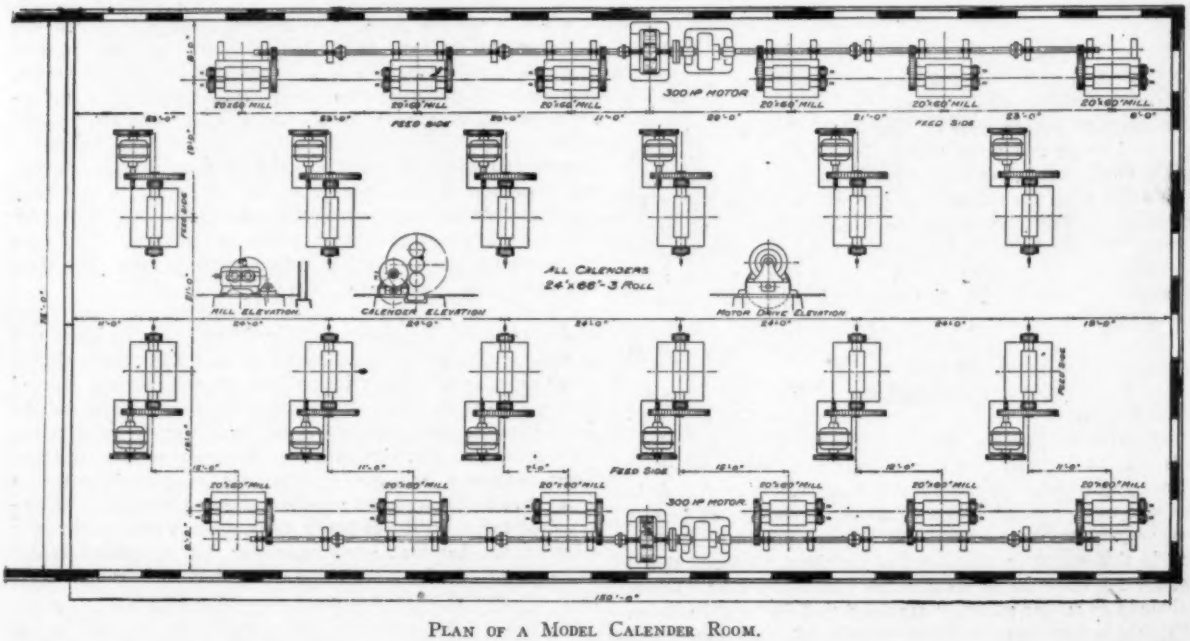
MILL DETAILS.

The mill housings are of cast iron, with caps of O. H. cast steel, giving the greatest strength possible to both frame and cap at the joint where they are fitted. This style of construction appears to be preferable mechanically to the present method, where the cap is made of cast iron and separate bars of steel are fitted between the frame and cap to secure the same results. The adjusting screw nut is so held in the housing that both the nut and screw can be removed from the frame at a moment's notice, without disturbing any other part of the mill. The rolls are of chilled iron, turned smooth and fitted with steam connections of the improved type, where the inlet pipe is located exactly on the center of the roll.

The roll bearings are full brass-lined and are interchangeable throughout. They are designed to carry automatic guides, which allow for the greatest possible working space on the rolls.

Special attention has been given to the gearing, the involute shape of tooth being used throughout. The drive pinion is split and flanged on the outer side only, so that it may be drawn out of mesh from the drive gear when it is desired to "cut a mill out." The connecting gears are of ample pitch, with no flanges, both being of O. H. cast steel. The large pitch and involute shape of tooth result in satisfactory service on a large range of centers, which fact will be found to be a distinct advantage as the rolls wear down. Both connecting and drive gears are fitted with slush-pans and gear-guards of convenient design.

The speed of the back roll is 24 r. p. m. and the front roll 16 r. p. m., giving a friction of 1½ to 1.



PLAN OF A MODEL CALENDER ROOM.

CALENDERS.

The calenders, which are 24 inches by 66 inches 3-roll machines, have individual drives, each machine being driven by a 75 horsepower variable speed direct current motor. The speed reducing gears have cut double helical teeth to reduce the vibration and wear to a minimum. The motor speed has a variation of 1 to 3 and permits a delivery on the calender of from 5⅓ to 16 yards per minute when running friction and from 8 to 24 yards per minute when running even. The motor controller is connected with a rod trip, located in front of the rolls, for emergency use.

Compact and easily operated clutches are used on the even and friction connecting gears, doing away with the antiquated method, requiring the operator to draw and drive keys in the gears when it was desired to change from even to friction, or *vice versa*. Both top and bottom rolls are adjustable from one handwheel, where are also located levers controlling the jaw clutches on the adjusting worm shafts. Change from quick to slow adjustment of the top roll may be made by shifting one clutch.

On either side of the calender are located the let-offs and wind-ups, the former having the hand type of brake and the latter driven by reversible gearing and adjustable by a stationary handwheel. An extended bracket placed on either side of the rolls provides for readily adjusted locations for tension rolls, knives, pressure rolls, etc.

The whole machine, with the exception of the adjusting mechanism of the lower, and a part of the speed gear, stands clear of the floor and all gearing is provided with guards and slush pans.

DEPARTMENT STORES GETTING THE RUBBER TRADE.

ONE of the best arranged displays of india-rubber wares for family trade is shown in a variety store in a small city within the metropolitan zone of New York. The space for the displays of staple and novel wares of rubber and gutta-percha goods is ample on shelves and counters, and the salespeople are well instructed by the salesmen of the makers of the wares, so as to make the buyers appreciate the merits of what is proffered to them. This small city is the home of more than one hundred manufacturers and distributors of rubber goods whose main offices are in New York. A number of these business men pass this particular variety store every day; they know the proprietor, and keep him informed about whatsoever is new in manufactures for household trade.

In an interview with a representative of THE INDIA RUBBER WORLD, the keeper of this variety store spoke as follows: "My frequent window displays and well advertised sales of rubber goods for family trade, are results from what might be called a campaign of education carried on for my benefit by friends in town who make or distribute such wares. I started out here to carry on a department store. But I found out that my ideas were, in that respect, years ahead of the times. I found that I must use my space for goods in a few fast selling lines. I gave no thought to rubber goods. I supposed that the local hardware and apothecary stores carried good lines in rubber products, such as families wanted. We have no factories hereabouts, so there is no market for belting or other rubber articles for industrial plants. On a venture, I laid in a small stock of rubber clothing and boots and shoes. There I stopped for a while. Then we began to have inquiries for rubber hot-water bottles, syringes and other wares of descriptions in which druggists specialize. I instructed my clerks to inform customers asking for goods that are commonly kept by drug stores, to go thereto to supply their wants. You see, in our city a great many families come every year from other places, and it takes them some time to find out where to go to buy for their household in a place like this, which is large in area but small in population.

"Sometimes the customers, whom we advised to go to the drug stores or the hardware stores for certain articles of rubber, would come back and say that those merchants did not have the goods in stock, or had none but inferior products that were unsuitable for well-to-do families. Then I decided to increase my lines of rubber goods, and as I had ample window and shelf-room for displaying such goods, I soon found out by my books that I was doing a profitable trade in rubber goods, which my friends in the local hardware and drug store trade told me were to them not worth keeping in stock. The reason those men gave me they believed to be correct. But I am satisfied that the explanation of their small sales was because they never made window, counter or shelf displays of such wares, and never advertised anything in the rubber line. They kept such goods where customers could not see them. Two drug stores in town used to keep fair lines of rubber goods for the household trade. But both stores now give almost one-sixth of their space to cold and hot beverages, and almost one-eighth to confectionery, ice cream, ices and light luncheon, and almost one-half the space is given to proprietary medicines and tobacco, cigars and cigarettes. In such stores, and the number thereof comes to above 40,000, taking the nation throughout, india-rubber wares, which years ago made quite a department in a retail drug store, are now what might be called sidetracked. That is to say, only a few articles are kept, as compared with the variety shown before most of the drug stores became confectionery, ice cream, luncheon and cigar shops.

"In our city, and in a number of adjacent cities, the hardware stores do not keep as large a variety of rubber goods as they did years ago. This is because in all cities, towns and villages in which a good deal of building, and the repairing and improvement of buildings by mechanics goes on for nine months in the year, the hardware stores have become mainly distributing agencies for building trades material, in heavy hardware and allied lines. In such stores to-day one sees little in rubber goods, except garden hose, and small stocks of packing and belting for farmers and small mechanical plants. Of course these druggists and hardware retailers, who keep but a few kinds of rubber goods are always ready to tell customers that they will order from the makers or distributors of rubber products, what is not in these retail shops. But the consumers want what they want in rubber, as in other wares, delivered on the spot."

This story, told by the proprietor of a department store in one of the suburban cities outside of New York, could be duplicated by many more, in similar positions, all over the country, and it is not only in the large cities and the suburbs that this marked change has taken place. It has occurred in practically all the smaller towns. The drug stores in the last ten years have devoted more and more of their space and attention to soda water, cigars, cigarettes and confectionery, and in some places to a light lunch as an adjunct to the soda-water fountain. The rubber department in the ordinary drug store, while not actually crowded out, has been much curtailed. But people must have rubber goods, so the enterprising department and general stores have not been slow to seize upon this line of trade.

CANADA USING OUR AUTOS.

A large number of the auto cars used in Canada are of American make. Exports to that country from the United States increased from 1,230 in 1909 to 4,687 in 1911, and this does not take into consideration the separate parts which were exported to that country and assembled on the other side of the line; nor does it take into consideration the cars made in Canada by the Canadian branches of American factories.

Mr. Baxendale's Report on the Rubber Show.

MR. CYRIL BAXENDALE, representative of the Planters' Association of Malaya, has written a report to that association covering the recent Rubber Exposition held in New York, which is exceedingly valuable as giving the viewpoint of the Eastern planter. This interesting paragraph is found at the very beginning of his report: "Owing to the extraordinary development in the manufacturing business (both in the U. S. A. and Canada) and the keen desire of Americans to learn more about plantation rubber, I am of the opinion that this exhibition will prove of greater value to our community than either of its predecessors, considerable as their value no doubt was."

He states that the exhibit of rubber made by the Federated

CYRIL E. S. BAXENDALE.

Malay States was visited by representatives of nearly all, if not quite all, of the rubber factories on the American continent, and he shows the appreciation in which they hold plantation rubber by citing the increase of plantation imports in the port of New York, the year 1911 showing imports of 6,590 tons, while the first eight months of 1912 show imports of 8,067 tons.

He lays a great deal of emphasis on two great disadvantages under which plantation rubber is now placed; one is the lack of uniformity in tensile strength, and the other, which is attributable in no way to the Eastern planter, is the very poor method in which this rubber is packed for the New York market, coming in rough wooden boxes with chips of wood mixed in with the rubber. This bad packing is due to the carelessness of the European shippers, who do not forward the rubber in the original packages, but repack it themselves in an exceedingly slovenly way. He speaks of an American importer who showed him a parcel of rubber about 5 pounds in weight which contained a mixture of about thirty scraps of Crepe of every conceivable shade. This parcel, according to the importer's statement, is a fair sample of the condition in which plantation rubber is received at this port. This importer strongly favored direct shipments from Malaya and also spoke of the need of stamping all plantation rubber with the name of the estate or with some other mark of identification.

Mr. Baxendale visited quite a number of the leading factories in the United States and Canada, and gives a great deal of information regarding American manufacturing processes that cannot but be of interest and value to the Eastern rubber growers.

One manufacturer recommended, in order to bring about a uniformity of importations, that a plant, or plants, be established on the estates for testing the rubber before it is shipped out; these plants to consist of the following apparatus: First, an acetone extracting apparatus to ascertain the percentage of resin; second, a machine for testing tensile strength; third, a mixing machine; fourth, a vulcanizing plant, and fifth, a miniature washing plant—the expense of such a testing laboratory, where it is too much for one estate, to be borne by a group of estates, all of them utilizing its facilities. This same manufacturer said that he was prepared to pay from 5 per cent. to 10 per cent. over the current prices if he were assured of the rubber's uniformity up to the following standard:

Tensile strength.....not less than 1,750 lbs. per square inch.
Stretch.....not less than 6½ times.
Resin.....not more than 2 per cent.

Mr. Baxendale quotes another large manufacturer as saying that he had placed his first order for plantation rubber since visiting the New York Exhibition, adding that no information that he had ever received before through correspondence or conversation had aroused anything like the interest in his mind in the product of the Middle East that had been inspired by his personal inspection of the fine exhibits in the Malaysian and Ceylon courts. Mr. Baxendale speaks of the great care that should be taken in the using of artificial coagulants and the necessity of keeping them at the lowest possible limit. He says the general opinion among manufacturers seems to be that acetic acid if used in very small quantities is harmless, but that no other coagulant should be used in the bulk until there is absolute proof that it can be used without injury.

He states his conviction that Mr. Manders and those associated with him in organizing the exhibition held in New York have done a very genuine service to the plantation industry, as it enabled the planters to bring their product before the personal attention of their best customers, and he concludes his report as follows: "I must express my appreciation of the kindness I received in the United States and Canada, from all the leading representatives of the trade. The freedom with which manufacturers discussed every detail of their business and accorded their permission to use any information they gave me for this report, is the best evidence that their experience with plantation rubber has been sufficiently satisfactory to encourage their desire to improve the acquaintance."

IMPROVED APPLIANCE FOR CUTTING RUBBER.

THE "Ceylon Observer" quotes the following description of a patent application which has been accepted by the Registrar of Patents:

"Improved appliances for cutting rubber whether in sheet or crepe or otherwise and other substances.

"The appliance consists: (1) Of a long knife hinged at one end to a table and capable of moving about that hinge in a vertical plane, being guided in that plane by providing large vertical surfaces of contact at the hinge as well as, when necessary, by providing a vertical spring guide or guard at the end of the knife farther away from the hinge and against which the knife bears in its descent; (2) of a blade fixed in a vertical plane to the table and against which the side of the movable knife bears and so provides the shearing action required.

PRINCIPLES OF PLANTATION RUBBER CULTIVATION.

THE history of plantation rubber is one of the most prominent features of modern commercial progress. Beginning with the despatch of Pará seedlings to Ceylon in 1876 by H. A. Wickham, the pioneer in this work, it has assumed enormous proportions and is still growing. As the German Colonies have been among the last to take up the question, interest attaches to a paper read by Dr. E. Marckwald at the recent Congress of Applied Chemistry, entitled "The Treatment of Rubber on Plantations, with Particular Reference to Personal Experiences."

Dr. Marckwald last year visited German East Africa and published his experiences in a booklet reviewed in THE INDIA RUBBER WORLD of March 1, 1912 (p. 269). This paper deals with the general question of plantation rubber, and thus brings out various new points, following up and supplementing his previous remarks.

SCIENTIFIC PLANTING.

It might have been expected that the mistakes committed in the German colonies, caused by insufficient experience, would have been avoided elsewhere, but such has not been the case. Even in the English colonies, it is remarked, scientific and practical tests have not been carried out to the anticipated extent. It is added that today the best wild rubber, Brazilian Pará Hard Cure, is so far superior to plantation rubber that the latter, notwithstanding its attractive appearance, cannot be used in articles of high quality.

HISTORY.

The history of plantation rubber is dealt with, its well-known features being brought out. Its first beginning is said to have been in 1861, when the Dutch forest authorities established *Ficus* plantations in Java, which by 1864 had attained a certain degree of importance. Being, however, neglected, they fell off, so that the despatch of seedlings to Ceylon by Mr. Wickham in 1876 was really the start of the industry, the aggregate production of which in 1911 was about 14,000 tons. This quantity, it has been estimated, will be doubled in 1913. The favorable regulations made by the government of the Malay States contributed to the growth of plantations in that quarter. Lands are there leased for the duration of one life, at the rate of one dollar per acre per year, until the trees are in bearing, when the rent is advanced to three or four dollars a year.

GERMAN POSSESSIONS.

The German plantation industry dates from the year 1892, when cuttings of *Hevea* were first sent from Ceylon to Kamerun. It would seem that the German authorities, in their justifiable attempt to remedy abuses, have shown themselves disposed to place obstacles in the way of planters acquiring concessions of lands.

PRINCIPLES OF RUBBER PLANTING.

In covering this subject, Dr. Marckwald touched on its detailed features:

SEEDS.—The selection of seeds is a point which, in his opinion, does not receive sufficient attention in any country. Sowing takes place without any discrimination, and to the planter's astonishment, trees planted on the same soil, with the same girth and tapped at the same time, give yields differing as much as tenfold. This fact indicated the mixed planting of high and inferior grades of seed.

PLANTING.—After dealing with the question of the best time for planting, Dr. Marckwald controverts the assumption that trees with a large number of branches give more profitable yields. On the contrary, the cost of tapping in such cases is 30 per cent. more than the normal rate, which reduces the profit.

DISTANCE.—Plantations being usually valued in accordance to the number of trees, efforts are made to plant as closely as possible. The Malaya plantations were some years ago planted on the scale of 12 x 12 feet, but the average scale is now 17 x 17 feet. Doubts were expressed whether the latter distance ensures the best results, while narrow intervals hinder the tree from developing its fullest dimensions. The yield of *Castilloa* per tree in German New Guinea was increased by widening the distance for planting, from 1 ounce to 9 ounces per tree within a few years. *Manihot* plantations in German East Africa, Dr. Marckwald found, planted 7 x 10 feet, 10 x 10 ft. or 10 x 17 feet, while he considered 17 x 17 would have been right.

TAPPING.—The various methods of tapping in different countries were discussed. With regard to tapping knives, of which new models are constantly appearing, it is recommended to have a different construction for the different varieties of tree. The fundamental conditions are that they should be cheap and simple, easily and quickly handled by the tapper, and that their use will not injure the tree.

COAGULATION.—Dr. Marckwald expressed the opinion that the proper methods of coagulation cannot be determined in a general way, but require to be decided according to local circumstances. After dealing with the various methods hitherto used, he referred to the success which had attended his efforts in conjunction with Dr. Fritz Frank, to introduce into the rubber in the process of coagulation certain salts from the soil which gave exceptional nerve. Another process of a German expert was intended to prevent the giving off of any injurious substances from the milk during the coagulation. The combination of these two processes seemed to him destined to operate a complete revolution in the matter of coagulation, and to allow of the production of rubbers, on the one hand superior in nerve to all those already known, and, moreover, possessing remarkable durability.

The question of the right choice and preparation of the ground for planting and that of manuring were likewise dealt with in this interesting paper.

In conclusion Dr. Marckwald remarked:

"The future belongs to plantation rubber, but only to the rubber of those plantations which are rationally planned and conducted; on which favorable labor conditions prevail; which have sufficient capital at their disposal and which send into the world's markets first-class standard qualities, as part of the production of their respective countries."

A FAMOUS SOUTH AMERICAN EXPLORER.

THERE are very few American explorers who have done as much genuine exploring and who have had as many moving experiences as Edgar Beecher Bronson, and still fewer who have written about their experiences in such an interesting way. Everybody who follows the literature of exploration and discovery will remember the absorbing book, "In Closed Territory," which appeared two years ago, which gave a description of Mr. Bronson's quest after big game and general information in British East Africa, where he covered much of the same territory traversed by Mr. Roosevelt a year or so later.

Mr. Bronson has recently returned from a two years' tour of discovery through the rubber countries of South America. He entered Colombia from the Pacific Coast in the spring of 1910, and in the course of his extensive travels traversed Ecuador, Peru, Bolivia and a considerable part of Brazil. In December of 1911 he started down the course of the Madre de Dios River, which ultimately finds its way into the Mamoré River. He then went over the length of the Madeira-Mamoré Railroad, just opened, and landed in Pará in May, 1912. He had with him a considerable body of men for field work, and devoted himself especially to a careful study of the sources of crude rubber supply in the great rubber basin of the upper Amazon. Just when Mr. Bronson will give the result of his two years' sojourn in the heart of the rubber country to the world is uncertain, but when he does it will be something worth reading.

The Philippine Rubber Planting Industry.

PHILIPPINE rubber has for some time been discussed, first as a possibility, then as a probability, and later as a certainty. It has, however, been reserved for the International Rubber Exposition to show the actual product.

Rubber planting has made its chief progress in two of the Philippine provinces—that of Moro, which includes the large

EIGHTEEN-MONTHS-OLD PARA RUBBER.
[BASILAN PLANTATION CO.]

island of Mindanao, in the southern portion of the group, and its tributary island of Basilan at the southwestern extremity, and the Province of Mindoro, comprising the island of that name, in the western part between the islands of Mindanao and Luzon (Manila). It has been estimated that the total area under rubber in the Philippines is about 6,000 acres, of which, roughly speaking, about 3,000 are in the province of Moro, 2,500 in Mindoro and 500 in other provinces.

In Moro province is situated the plantation of the Rio Grande Rubber Co. of Cottabato, of about 2,000 acres, planted in 1910, and that of the Basilan Rubber Co., with about 700 acres, as well as some other companies. The province of Mindoro has about 2,500 acres planted, of which approximately 1,000 are estimated to belong to the Baco Rubber Co., and about the same to the Sellner Rubber Co., while the remainder is represented by the plantings of smaller companies. The bulk of the Mindoro as well as the Moro planting has been done since 1909.

That company having been the first to place Philippine rubber on the market, it was appropriate for the government of Moro Province to appoint Dr. J. W. Strong, general manager of the Basilan Co., Island of Basilan, Province of Moro, to the post of Commissioner to the International Exposition. Interest therefore attaches to his estimate of the total Philippine plantings in various years.

Acreages planted in various years.

Year.	Approximate acreage.
1905	360
1906	360
1907	1,200
1908	1,200
1909-11	2,880
Total	6,000

Of these, 90 per cent. are in *Hevea* and 10 per cent in *Castilloa*. It is anticipated to increase the area planted next year, particularly if certain proposed arrangements are carried out by American capitalists.

The Basilan Co. has 660 acres planted in the following years:

	Acres.
1906	40
1907	10
1908	30
1909	..
1910	70
1911	250
1912	260
Total	660

These quantities are practically all in *Hevea*, and it is expected to add 500 acres more next year.

It is of interest to note that the bulk of the companies now cultivating rubber are understood to be working with American capital.

PLANTING PHILIPPINE RUBBER.

It took eight years from the time of the American occupation for the first planting of Basilan rubber of 40 acres to be ef-

FIVE-YEAR-OLD PARA RUBBER.
[BASILAN PLANTATION CO.]

fected, in 1906. It is the result of the early plantings which is now reaching maturity in the form of the rubber being shipped and exhibited, shown at the recent New York Exposition, by the Province of Moro, on behalf of the Basilan Plantation Co. This

company claims to have been so far the only one to show the finished product and to ship Philippine rubber. Although its rubber has up to the present only entered the American market on a very limited scale, it has within the last few years been favorably received in Europe, particularly in London and Hamburg. One of the first shipments made realized in May, 1910, at auction in London, the equivalent of $2.63 per pound, and has ever since commanded about the top price.

VARIETIES PLANTED.

Although at first *Hevea* Ceara, and *Castilloa* were tried, the first-named became the most important, it being estimated that 90 per cent. of the acreage at present planted is in that variety, the balance being distributed between the others. The various

SIX-YEAR-OLD PARA RUBBER.
[BASILAN PLANTATION CO.]

grades were represented among the samples exhibited at the recent exposition. The *Castilloa* virgin scrap exhibited is the first *Castilloa* tapped in the Philippines.

SHIPMENTS OF BASILAN RUBBER.

The first small shipment (of Ceara rubber) was made in 1909 to Hamburg, subsequent shipments being Pará. A quantity of 130 pounds was shipped to London in 1910, while 600 pounds were shipped to Hamburg in 1911. Arrangements have been made for shipments to Gravenhorst & Co., New York, thus following up the success achieved in Europe.

An official report confirms the statement of the Moro Province Government that the Basilan Co. is the only one at present actually producing rubber, out of some eight rubber companies established up to the present in the Archipelago.

PROSPECTS OF PHILIPPINE RUBBER.

By the extent of the plantings since 1909, it is evident that large interests are involved in Philippine rubber, which tend to assure its development. It may, therefore, be of interest to glance at the physical conditions under which it is being cultivated.

CLIMATIC CONDITIONS.

Large quantities of Government land can be secured on the easiest terms, and the Philippine soil, it is claimed, is not surpassed by that of any rubber-growing district in the world. The annual rainfall of 100 inches is evenly distributed throughout the year; while being out of the typhoon belt, there are no storms; the temperature rarely exceeding 92 degs. F. In fact, the Philippines have been described for centuries as essentially a "white man's country."

The location of Moro province is an ideal one, its most northern point reaching nine degrees north of the equator; the limit in which *Hevea* rubber does best, being within a zone ten degrees north or south of the line.

COST OF PRODUCTION.

The various elements of cost of production have been carefully analyzed by the Moro Province Government. According to its estimate, new land can be brought into cultivation for a price per acre of $50.94, as compared with $73.60 in Sumatra, $109.94 in Java, and $137.42 in the Straits Settlements.

The relative costs of upkeep per acre are quoted: Moro Province, $18; Sumatra, $20; Java, $23; Malay States, $29. It is claimed that an acre of Pará rubber can be brought into bearing (fifth year) for $100, covering all charges, including cost of land.

Rubber is usually planted from 100 to 150 trees per acre. As the yield increases year by year, the cost of production gradually diminishes. From carefully-kept statistics, five-year-old rubber trees have averaged three-quarters of a pound per tree, against estimates by world's experts of half a pound for trees of that age. This brings the cost per pound of dry rubber of finest quality, ready for shipment, to 33 cents per pound, which can be reduced as the yield increases with age. Abundant native labor is procurable at 20 to 30 cents per day, United States currency, of a character far excelling that of other rubber countries. There is, moreover, a very efficient contract labor law.

TAPPING AND PREPARATION.

The trees are tapped in the early morning, being finished by 10 a. m., when the tappers are available for other work. The latex is coagulated at the factory with acetic acid or other coagulant, the operation taking from one to two hours, and the surplus water expelled by wooden or metal rollers. The rubber is then placed on galvanized woven wire racks to dry. After drying, if so desired, it is smoked, when the sheets, crepe or biscuits are ready for packing.

ESTIMATE OF ACREAGE APPROACHING PRODUCTIVE STAGE.

While the Moro Government Commissioner's estimate of the total planted area in the Philippines is 6,000 acres, the official estimate of the Director of Agriculture places the acreage in promising rubber trees (approaching the bearing stage) as about 1,250 acres. The acreage on paper, it is added, might amount to 125,000 acres.

The official report attributes the failure of the hundreds of thousands of Pará seedlings within the last few years, to drought, unsuitable location, natural enemies, improper planting of seeds, transplanting of young trees and mistakes in management.

Only Pará rubber, it is stated, is now considered of value on the plantations, Ceara and *Castilloa* having in most cases been abandoned, owing to their inability to withstand droughts and strong winds and their variability in yield of latex.

It is understood that the Philippine government will shortly

endeavor to compile a detailed statement of the acreage of rubber in the Philippines, respecting which the data hitherto available are insufficient.

The climate being the finest in the Far East, the Moro Province Government believes it has the best rubber-growing country in existence and predicts a brilliant future for Philippine rubber. Moro Province, it will be recalled, is the most important center of Philippine rubber cultivation.

Rubber-Growing in the Philippines.

By Richard Arthur.

IN 1906 the value of plantation rubber exported from the Middle East was $1,250,000. Last year it was about $30,000,000. In the near future there is no doubt whatever that it will run up to $100,000,000.

"The romance of plantation rubber," says H. Kerr Rutherford, formerly Chairman of the London Rubber Growers' Association, "is the old, old story. A few resolute men working in Eastern jungles, having faith in the ultimate success of the work they had undertaken: hampered by want of capital, but undismayed by the carpings of the pessimists, they doggedly forged ahead to their goal. Some of the pioneers did not live to see the fruits of their labor, but many have been fortunate in bringing in their sheaves, and a host of outsiders, although never having seen a rubber tree, have, from the persevering efforts of these men, reaped a harvest where they had not sown."

The growing of rubber—"the exciting business of running a tree dairy," as someone has called it—is one of the greatest agricultural opportunities in the world today. The English have got a flying start in this venture. English agricultural science, English commercial activity and English capital are largely responsible for the creation of the vast rubber plantations which have come into being in the Malay States, Ceylon, Borneo and the Dutch East Indies. Lately considerable American capital has also been invested in rubber planting in these Eastern countries. But even now the United States is comparatively timid and backward in this respect. And yet this country has an enormous rubber field waiting to be planted—the Philippines. Here are millions of acres of public lands eminently suitable for rubber growing, that may be leased or purchased at a small figure. Labor is not difficult to find, and catch-crops can readily be grown on the same land while the owner is waiting for the rubber trees to mature.

A serious mistake was made, some years ago, in planting a large number of Ceara trees in the Philippines. Experience has shown that these are liable to damage by wind, and it is now an accepted fact that the best possible rubber tree for plantation purposes is the *Hevea Brasiliensis*. There is no hard and fast rubber belt as some experts claim, for the authorities concede that almost the whole extent of the Philippines has climatic and soil conditions favorable for rubber. Trees grow in the vicinity of Manila with the same luxuriance that they show in Mindanao and the islands of the Sulu Sea. In fact, rubber is being grown in Singalong, an experiment station in Manila, and across Manila Bay in Bataan province is the Abucay rubber plantation where two-year-old trees are now 20 feet high. In the island of Basilan are the Basilan Rubber Plantation Company, which has harvested rubber, and the San Rafael Rubber Company, whose trees are making a record for growth.

From Manila to Basilan is 600 miles in a direct line, and it is absolutely proven that all this area, at least, is rubber land, since rubber is growing healthily at its extremities.

Rubber growing in the Philippines is no longer an experiment; several of the existing companies are ready to tap, and one or two of them are already exporting rubber. Some of those whose trees are ready for tapping refuse to stop their work of planting, saying that the trees they are planting now are more of an asset than the small amount of revenue that present tapping would yield. They are working for a large output in the future rather than to make a present small profit.

In Mindanao, the Basilan Rubber Plantation Co. has produced and exported crude rubber for about three years. The San Rafael Rubber Plantation Co. have over 20,000 rubber trees, some of them large enough to tap, and they are planting out another 100,000 seeds and seedlings. Near Nueva Caceras in Ambos Camarines province, Mr. R. Richmond has a Pará rubber plantation of 10,000 trees, four years old, that are doing splendidly. The Abucay Rubber Plantation Co. near Abucay, Bataan province, have 40,000 Pará rubber trees two years old, and they have planted and are planting 100,000 more from the nursery. The Lapac Plantation Co. on one of the southern islands near Jolo, has a hopeful growth of rubber trees nearly ready to tap. Two companies, financed by Seattle capital, have been organized to plant rubber in Davao; and American and English residents of Manila have formed the Baco River Plantation Co., which this year planted 65,000 seeds in its nursery in Mindoro. This company has brought an expert from the Straits Settlements to manage its enterprise.

Wherever the trees in the Philippines are of an age suitable for tapping, the yield of rubber, says the government expert, is equal in quality to that obtained in the most favored localities in the East.

Besides having maintained for several years a conservative interest in the rubber industry in the Philippines, and having published numerous technical articles on the subject, the Bureau of Agriculture in the Philippines has arranged to distribute to the proper centers some 50,000 Pará seedlings; these young plants will be put out under the direction of the Bureau, and will be carefully watched until well established. It is believed that none of the dangerous fungus diseases which affect rubber in other countries have been introduced into the Philippines along with the seeds, which were obtained from Malaya. Nearly all districts of the Philippines, with the exception of Mindanao and some of the southern islands, are subject to a dry season, but the Bureau of Agriculture believes that in many otherwise unfavorable localities the soil about the roots of the young seedlings can be kept sufficiently cool by the new system of leguminous "blanket crops," thus preventing injurious packing and baking by the sun. Many of the failures that have been experienced with young Pará seedlings have been due to the neglect of the planters to furnish this necessary protection to the roots. Many of the planters have only recently learned in the expensive school of experience, that there is a tremendous difference in this connection between grass and plants of the legume family: grass roots excrete poisons which injure the roots of the rubber, whereas legume roots furnish a concentrated form of nourishment with no drawbacks or dangers whatever.

To all actual and prospective rubber planters in the Philippines, the Bureau of Agriculture extends the "glad hand," and stands ready to advise and to assist them as much as possible in the matters of site location, seed, plantings and general culture. With this valuable assistance and the experience of planters in other eastern countries to guide them, the planter of rubber in the Philippines has a first rate chance of obtaining a high degree of success.

Tapping Rubber Trees by Electricity.

SINCE Columbus' Day—and for nobody knows how many centuries before—rubber trees have been tapped in the same old way. An Indian with a machete or some other instrument has cut, hacked or gouged the tree, and placed a little clay cup—or in later years a tin substitute for the clay cup—under the cut for the latex to trickle into. Then he has gone laboriously around from one tree to another, emptying the latex into a gourd, emptying that in turn into a larger receptacle, and then dipped his paddle into the latex and held it over the palm-nut smoke until it coagulated. It has all been done by tedious, individual effort that finally secured the rubber, but very slowly and at great expense. It is not to be wondered at—considering these primitive methods—that rubber, ever since its usefulness became known to civilized man, has sold for $1, $2 and even $3 a pound.

But it looks as if all this might at last be changed, for here comes a scientist, Georg M. von Hassel, a German by nationality, but a Peruvian by many years' of residence, a civil engineer by profession, but an explorer by preference, and employed by the

ELECTRICAL TAPPING DEVICE ATTACHED TO A RUBBER TREE.

Peruvian Government for many years to explore the resources of its rubber territory, who has devised a method of extracting the rubber from the tree, which, if not instantaneous, is at least so rapid and efficacious in its operation that it is likely to supersede the ancient methods of the natives, if it works out in practice as it has given promise of doing in the various tests to which this process has been subjected. Mr. von Hassel's method is

SHOWING THE WIRE CARRYING THE ELECTRICAL CURRENT FROM TREE TO TREE.

nothing less than touching the button, and letting electricity do the rest.

Here briefly is the apparatus that he has devised. He places upon the trunk of the rubber tree a piece of sheet-iron about 5 feet long, 5 inches wide, with the two sides folded back against the tree to a thickness of about 2 inches, constituting a hollow channel of sheet-iron. This hollow channel is divided into a series of fifteen to thirty sections; the number of sections depends upon the number of days the apparatus shall be worked. Each section has a mechanism for the extraction of the latex from the rubber tree and a receptacle for receiving the flour, which also contains a preparation for the coagulation of the latex. When working *Hancornia* and *Castilloa* trees, plates provided with longitudinal canals are used instead of the receptacles for gathering the latex, and the product thus obtained is known as "Sernamby." This product is gained in the form of threads without the aid of acids or other chemical substances.

The method of operating is as follows: This channel of sheet iron, with the above-described mechanism and receptacles, is fastened against the rubber trees. If it is a small tree there will be two of these devices; if it is a large tree there may be as many as nine circling the tree and about a hand-span apart. This apparatus is connected by an insulated wire with a central station which is equipped with electric power. A machine devised by the inventor makes it possible to send the electrical current so that it will set the first section in motion. The latex then oozes out and flows into the receptacle immediately beneath. In the receptacle there is an acid preparation that coagulates the latex, converting it into rubber. The next day—or preferably 48 hours later—the current is turned on again affecting the second section, which in turn pricks the tree, bringing forth the latex which drips into the second cup and is there similarly coagulated. After another interval of two days, the third section is set in motion, and so on for the fifteen to thirty sections which are operated from the central station, tapping the tree and filling the receptacles with rubber.

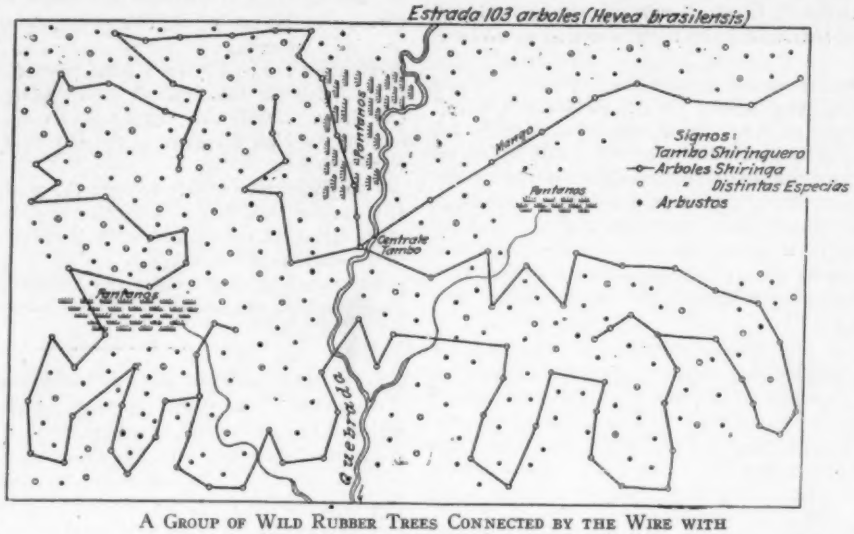
No one need approach the tree until the expiration of sixty days, when a handful of rubber will be found in each of the receptacles, and on a large tree where there are nine of these

devices—each with thirty cups—there will be 270 lumps of coagulated rubber waiting for the gatherer.

The same current that does the work on one tree can do the work on 5,000 trees by simply equipping that number of trees with these tapping devices, and connecting them by the insulated wire, so that the electrical current can be communicated. In actual tests, already made, between 50 and 60 trees have been tapped at one time from the central station.

The advantages of this system are obvious. Mr. von Hassel enumerates them as follows: First, the tremendous saving of labor, one man being able to do the work of 40 under the old system; second, the ability to tap trees in the swamps which cannot ordinarily be approached by the tapper; third, the fact that the trees can by this process be tapped very early in the morning before the sun is up, when the latex flows more freely; and fourth, the fact that by this process the trees can never be injured, the punctures made by the apparatus being so small as to heal very rapidly.

The accompanying illustrations give some idea of this method: The first photograph shows three of these sheet iron devices attached to a tree, together with the insulated wire that supplies electricity. The second photograph shows this apparatus on two different trees with a connecting wire. The third is a chart, illustrating the course followed by the wire running from the central station through a group of rubber trees.



A GROUP OF WILD RUBBER TREES CONNECTED BY THE WIRE WITH THE ELECTRICAL TAPPING APPARATUS.

The inventor is highly gratified with the success of the various tests his apparatus has been given, and expects to see it entirely supersede the present primitive methods of gathering rubber in the South American jungles.

The labor question has been the most difficult one to solve in the gathering of rubber in the Amazon country, but if Mr. von Hassel's electrical appliance is found, when tried out in a large way, to work satisfactorily, the Amazon labor question will have been solved; and if this apparatus proves practicable in the wild jungles of South America, it can certainly be operated even more efficaciously under the easier conditions of the plantations.

THE WEST COAST RUBBER COMPANY.

This company, which now has a capital of $250,000, expects soon to increase its capital to $500,000. The new issue will be devoted to increasing the plantings of rubber on the property in Guatemala. The property covers 22,000 acres and is located near the port of San José on the Pacific side. They now have 200,000 *Castilloa* trees planted, but expect to put out some *Hevea* next season. They have been shipping rubber each month for about four years except during the dryest months. This rubber was obtained from the wild trees on the property which are estimated to number about 300,000. A shipment is said to have brought within 3c. a pound of the price for Up River Para.

OUR DEBT TO THE TROPICS.

THE report sent out about the middle of November by the Department of Commerce and Labor of the Federal Government has to do with tropical imports into the United States, and contains a number of exceedingly interesting items. The value of the imports into this country from the tropics as shown last year is $750,000,000. One-half of this consists of foodstuffs, sugar leading with a value of $200,000,000, coffee coming next, with $100,000,000. In manufacturers' materials rubber leads by a considerable margin with a value of $100,000,000. The importation of rubber from the Tropics has increased from 58,500,000 pounds in 1900 to 125,500,000 pounds in 1912, the value having increased from $32,000,000 to $100,000,000. The largest contributor to the entire $750,000,000 worth of imports from the Tropics is Brazil, and, of course, Brazil is by far the largest contributor of our crude rubber. The United States takes over 36 per cent. of the exports from Brazil, but of the Brazilian imports less than 13 per cent. represents goods from the United States, showing that to keep up an equality of trade we ought to increase our exports to Brazil by 200 per cent.

ANTICIPATED SURPLUS IN CUSTOMS' RECEIPTS.

ACCORDING to the statement of Acting Secretary James Freeman Curtis, of the United States Treasury Department, the deficiency in customs receipts for the year ending June 30 last, (which he had estimated as compared with the previous year at $18,000,000), only turned out to be $4,000,000.

During the new fiscal year customs' receipts have exceeded by $10,000,000 those of the corresponding period of 1911. Should this improvement continue, he anticipates for the current financial year ending June 30, 1913, a surplus of $50,000,000. In Mr. Curtis' opinion the situation is all the more remarkable in view of the continued agitation for a revision of the tariff downward. There is no way, he adds, to explain the heavy customs receipts except on the theory that importers no longer stand in awe of politics or prospective tariff legislation.

THOUGHT IT PROPER TO TIP REPORTERS.

In the course of the inquiry now being held in the House of Commons as to the responsibility of the British directors of the Peruvian Amazon Co. for the Putamayo atrocities, a newspaper reporter gave evidence that when he was inspecting the charges against the company's directors one of the officials handed him an envelope containing a bank note and told him that this was in recognition of the trouble the reporter had taken, but that the company preferred not to have anything further printed about the charges. The reporter returned the money, and later the chairman of the directors stated, by way of explanation, that the tender was made by one of the foreign directors, who thought it was customary to tip reporters.

NEW TRADE PUBLICATIONS.

THE October number of "The Goodrich," which, by the way, is No. 2 of Volume 2, is, like its predecessors, full of interesting matter and attractive illustrations. The cover is an excellent example of art in commercialism; it shows a night view of Akron, with the big Goodrich mills ablaze with light, and this night landscape is framed in by a cross section of a Goodrich tire.

In the reading matter of this number the important place is given to an article "On the Dawson Trail With Goodrich Tires," by J. C. Manning, who describes the famous Dawson trail, and, incidentally, speaks of "the record of a set of Goodrich tires on a 1909 model Winton Six which, in less than two years, has covered 9,000 miles under the most primitive road conditions to be found on the North American continent. And the tires are still in good condition; they have not cost a penny for repairs or replacement up to date, and apparently have still left in them a few thousand more miles of useful life." This article is generously illustrated.

Easterners have an idea that in matters of art—printing, for instance—they are considerably in advance of their friends in the extreme West; but this is only another one of those superstitions that have come down from the fathers. Here is a catalog issued by the Boyd Rubber Co., of Seattle, coast agents for the Apsley Rubber Co., which shows that just as good commercial printing can be done along the Pacific seaboard as along the Atlantic.

This is a catalog of 72 pages and cover, 4 x 9 inches in size (just a convenient shape for the coat pocket), and contains a great deal of information in compendious shape regarding the rubber lines carried by this company.

A NOTABLE CATALOG.

Combining all the advantages of careful preparation and artistic execution, the new assembled general catalog of the Boston Woven Hose and Rubber Co. ranks among the highest of its class. It is seldom that, even in these progressive days, such completeness in design and execution is met with.

A prominent feature of the catalog is the practical form in which the company's production is classified. Rubber belting, rubber hose, garden hose, fire hose, matting, insulating tape, tubing and molded goods, jar rings and brass fittings, form the links in the chain of the company's products, and are conveniently indicated by marginal indexes, so that the reader can at any time refer to a particular branch.

The general advantages of rubber belts are concisely dealt with in the earlier pages of the catalog, followed by an illustrated description of the fifteen standard brands in which rubber belting is made. Canvas beltings are then taken up in their standard grades, while valuable details as to lacing and putting on belts lead up to a code of "Handy Belt Rules," intended to help users of belts to profit by them to the utmost extent.

Another equally interesting phase of the company's manufactures is the section devoted to hose, with its subdivisions of water, suction, steam, pneumatic, vacuum and railroad hose. These various uses of hose are appropriately illustrated by representations of their application, this forming one of the many attractive features of the catalog.

The domestic uses of the company's products are illustrated by the sections for garden hose, matting, tubing and jar rings, while the importance given to fire hose will be appreciated not only by fire fighters, but by property owners who desire to keep abreast of the latest improvements in that line. The molded goods section includes rubber heels, bath brushes and other specialties.

But apart from its other merits, this comprehensive catalog appeals to the buyer or purchasing agent by its practical features, being frequently interleaved with plain or ruled paper. Its size, about 7 x 8, gives it breadth of beam, allowing of the text and illustrations being effectively displayed. It is printed on a heavy coated paper and the typography is in harmony with its other high-class features.

While the varied extent of the company's products give importance to this catalog (of 300 pages), the manner in which they have been presented calls for special notice. While the numerous illustrations are usually on a white ground, the text is generally upon a delicate Nile ground, which brings up the type most effectively. Nearly every page either carries or faces an illustration; the high character of the artistic work meriting special commendation.

Two distinctive features enhance the usefulness of the catalog. It is on the loose leaf plan, so that any desired portion can be easily removed and replaced, while its flexible leather cover adds to the convenience of using it.

The whole catalog reflects the highest credit upon all concerned in its preparation.

A HANDSOME JUBILEE SOUVENIR.

GERMANY is admittedly the home of the factory jubilee, in which the work of several generations culminates in a festive celebration, shared in with like enthusiasm by the heads of the concern and by its youngest workers. More than usual interest has attended the festivities, marking the fiftieth anniversary of the Hannoversche Gummi-Kamm Co., A. G., now styled the "Hannoversche Gummiwerke 'Excelsior' A. G.," which took place a short time ago.

Through the courtesy of Mr. Julius Lehmann, vice-president of the Hanover Vulcanite Co., the American branch of the concern, THE INDIA RUBBER WORLD has received a copy of the elegant souvenir, lately issued in connection with the celebration. This "Jubiläums-Festschrift" records in the highest style of graphic and pictorial art the chief features of the occasion.

Turning to its various pages, the reader first meets a striking representation of the factory at its various stages—in 1862, 1870, 1880, 1892, 1899 and 1912, together with portraits of the general director, Herr Georg Heise, Royal Prussian Commercial Councillor; Director Wilhelm Siercke, Director Gustav Bartl, and Herr Hans Breul, chairman of board of inspection. Herr Heise entered the company's service in 1872, Herr Siercke in 1886, and Herr Bartl in 1873, these three gentlemen constituting the present management.

Next in order come scenes from the dramatic representations which marked the occasion, in which the staff took part. These included a "Rubber Ball Ballet."

The "History and Gathering of Crude Rubber" are illustrated by representations of tapping, gathering and smoking, with appropriate explanatory text. In another series of illustrations the various processes of manufacture are shown, commencing with the examination of the crude rubber and taking the reader through the various operations of washing, mixing, calendering and other processes. Next follow the pages dealing with the production of combs (the original specialty of the company, from which its earlier name was derived). The various stages of manufacture and packing are effectively illustrated. In following pages the manufacture of hard rubber is dealt with, leading up to that of pneumatic tires, which gives prominence to the "Excelsior" tire. Rubber toys, surgical and sanitary articles, rubber sponges, heels and other branches are next dealt with.

The work appropriately concludes with a series of views of Hanover and Hanoverian life, artistic specimens of color printing, supplemented by highly interesting descriptive text. The form in which the souvenir has been got up reflects the highest credit on all connected with its preparation.

The Editor's Book Table.

THE DETERMINATION OF TOTAL SULPHUR IN INDIA-RUBBER. By C. E. Waters, associate chemist, and J. B. Tuttle, assistant chemist, Bureau of Standards. Reprint 174. Washington, 1912. [Paper, 9 pp.]

IN this summary of the various tests for the determination of sulphur in rubber, the authors refer to that published by Henriques in 1899 as being still the usual method and too well known to need detailed description. Other methods have since been advocated, such as those of Alexander, with sodium peroxide; Esch, with Eschka's mixture; Wagner, with a slight modification of Henriques' method; Pontio, with manganese peroxide and a mixture of sodium and potassium carbonates; Hinrichsen, with nitric acid; and, finally, Hübener, with concentrated or fuming nitric acid and bromine, intended to exclude insoluble mineral sulphates.

Having frequent occasion to determine the total sulphur in rubber, one of the authors made a number of comparative tests of different variations of the Henriques method. These tests were made with two samples of rubber each of 0.50 gram. The proportion of sulphur, as shown by five series of tests, varied from 2.93 to 3.71 in the twenty separate tests.

In an attempt to obtain satisfactory results without fusion, and without a knowledge of Hübener's paper, determinations were made several months later. After Hübener's paper had been called to the attention of the authors, some further determinations were made on a sample of hard rubber containing no barium. These determinations (22 in number) were made with variations of the Hübener and Henriques methods, full particulars of which are recorded.

In their concluding remarks, the authors call attention to the fact that treatment of the rubber with nitric acid alone gives low results, this being probably largely due to loss of free sulphur; since nitric acid alone does not completely oxidize sulphur to sulphuric acid in the length of time usually taken for a determination. The fusion method gives results very close to those obtained by direct precipitation and by neutralization. The best results, in the authors' opinion, seem to be obtained by the use of the method, according to which the rubber is decomposed by means of nitric acid saturated with bromine; this being apparently a modification of the Henriques method.

The treatment of the subject indicates much laborious research and investigation on the part of the authors.

LEADING AMERICAN INVENTORS, BY GEORGE ILES, New York, 1912. Henry Holt & Co. [Cloth, 448 pages.]

Forming part of a series of "Biographies of Leading Americans," this compendium of the lives of a dozen leading American inventors of note contains a wealth of acceptable reading, particularly appealing to those interested in one or another of the branches of industry dealt with.

Seeing the diversified nature of American invention, Mr. Iles has had a difficult task in selecting representative names, but has been successful in his efforts.

John and Robert Livingston Stevens, those pioneers of marine and railroad engineering at the commencement of the last century; Robert Fulton, who developed the steamboat; Eli Whitney, the inventor of the cotton gin; Thomas Blanchard, who made the Blanchard lathe; and Samuel F. B. Morse, the commanding figure in American telegraphy, are successively treated.

Next to these comes Charles Goodyear. The forty pages of Goodyear's biography are replete with incident, following the course of his struggles and successes. He may be said to form the central figure in this brilliant group of inventors.

In continuation of the record of American invention, the lives of John Ericsson, the greatest engineer that Europe ever bestowed upon America; Cyrus H. McCormick, inventor of the reaping machine; Christopher Latham Sholes, to whom we owe the typewriter; Elias Howe, father of the sewing machine; and Benjamin C. Tilghman, who first introduced the sulphite pulp process and the sand blast, are dealt with. Finally the story of the latest in the group, Ottmar Mergenthaler, the inventor of the linotype, is told in detail, closing with his death in 1899.

This valuable record of American invention indicates a vast amount of careful research and forms an appropriate tribute to the American inventive genius which was such a prominent characteristic of the nineteenth century.

Fifteen artistically executed portraits give a marked personal tone to the volume, while the text is supplemented by a number of illustrations.

RUBBER FACTS AND FIGURES, NO. 8. FREDERICK C. MATHESON & Sons, London.

The latest issue of this *vade-mecum* of the rubber share investor records in tabulated form the most recent information about acreage, number of trees and output, as well as dividends. One important fact is shown prominently: the number of tappable trees as compared with the total planted. Now, when production is increasing by leaps and bounds, it is necessary to keep track of the total trees and what is equally important—of the year when they will be in bearing. This last information would acceptably supplement the many other valuable points of this booklet.

DER KAUTSCHUK, SEINE GEWINNUNG UND VERARBEITUNG. (Rubber, Its Production and Manufacture.) By K. W. Wolf-Czapek, Berlin, 1912. Union Deutsche Verlagsgesellschaft. [Cloth, 8vo, 128 pages, with 50 illustrations.]

In this handy little volume, 7 x 5, is condensed a quantity of information, treated in a clear and perspicuous manner, and so divided that those seeking light on a particular subject can readily find what they want.

The scope of the work includes the sources and production of rubber, and its chemistry; as well as the questions of filling substances and rubber solutions. Vulcanization and preparations for manufacture are dealt with in a lucid way; the special subjects of hard and soft rubber goods, rubbered fabrics, hose, tires and seamless rubber goods, being successively handled. Treating the matter from a commercial standpoint, the chapter on "Rubber in the World's Trade" deals with the various classes of rubber and with details affecting their distribution.

One feature of special interest consists of the illustrations showing the inspection of rubber samples by the dealers in a London warehouse; the office of a London rubber broker with samples laid out, and the public auction of rubber in London.

Illustrations of the principal machines used in rubber manufacturing are a valuable aid to the general non-technical reader, for whom the work is largely intended, and to whom its clear explanations appeal.

ACCORDING TO A CONSULAR REPORT ENCOURAGING advices come from the Kagi district of South Formosa concerning the new rubber plantations undertaken by private capital. The rubber seed was imported from Hawaii. Nearly 50,000 rubber trees were transplanted during the rainy season and few died. The Formosa Agricultural and Forestry Co. is engaged in the rubber industry, but private plantations are said to be more promising.

THE RUBBER TRADE IN AKRON.

By a Resident Correspondent.

THE sixth building to be either built or remodeled by the Goodyear Tire and Rubber Co., was started November 16. This will be 100 x 260 and seven stories high, the construction to be absolutely fireproof, of brick, steel and reinforced concrete; estimated cost, $100,000. They are constructing two new factory buildings, remodeling a factory building, an office building and an employment office. The total approximate cost will be $400,000.

* * *

The Goodyear Tire and Rubber Co., of South America, has been organized under the laws of Maine with a capital stock of $3,000,000. The object of the incorporation as given in the certificate is to operate rubber plantations in South America and to manufacture the raw product. Several years ago F. A. Seiberling, president of the Goodyear Co. made an extended trip through South America, where he studied the rubber supply thoroughly.

It is understood that the Goodyear company has representatives in Brazil who are thoroughly investigating this rubber field. The Brazilian government is offering certain exemptions from taxation and bonuses to rubber factories, which were described in detail in the June issue (page 427) and the October issue (page 2) of the INDIA RUBBER WORLD.

C. W. Seiberling, vice-president of the Goodyear Tire and Rubber Co., says: "Our sales for the fiscal year ending November 1 approximate $25,000,000. The contracts indicate that for the coming season we will supply to car makers 200,000 sets of tires. The demand for Goodyear tires has compelled us to add three new buildings. The company has acquired the entire property of the Akron branch of the Great Western Cereal Co., located on East Market street, just west of the company's present buildings. These buildings will be used for storage until such time as it is necessary to utilize the ground for manufacturing purposes. The three latest additions aggregate 335,300 square feet of floor space, which brings the total to date, 1,935,300 square feet, which equals a factory 60 feet wide, one story high and six miles long.

* * *

The Goodyear Tire and Rubber Co., Limited, of Bowmanville, Canada, has built two additional buildings, doubling its 1911 capacity. The company has purchased and remodeled a large hotel in Bowmanville to be used as a club house and has erected a new office building in Toronto. In March, 1912, the capital stock was increased to $250,000, and in October it was again doubled.

* * *

Four hundred members of Cleveland's Chamber of Commerce —all leading business men of that city—recently made a trip to Akron on a special train, for the purpose of visiting the B. F. Goodrich Co.'s factory. The entire trip occupied six hours, two hours of this time being devoted to the inspection of the great Goodrich plant. The visitors were received by C. B. Raymond, H. E. Raymond and other officers of the company, and were divided into twenty different parties, each party with its own guide, so that the tour of inspection might be intelligently made and all questions answered that naturally would arise.

* * *

"The Goodrich" for November is called the "Fire Chiefs' Number" and is given almost exclusively to fire department news.

The B. F. Goodrich Co. is making a more thorough development in its system of training salesmen. Donald Hotchkiss, who has had charge of the Richmond branch, will have charge of the training of salesmen under the direct supervision of the heads of the sales department.

B. G. Work, of The B. F. Goodrich Co., has bought a home on Fifth avenue, New York, and will divide his time between Akron and New York.

The B. F. Goodrich Co. has opened a new store in Los Angeles, California, located at 1175 B street, with Mr. Schoenraub in charge.

Mr. R. W. Hainer, of the Goodrich company, has been elected general manager of the Electric Rubber Reclaiming Co., Barberton, O. The machinery is in place and the company is putting out standard goods.

* * *

The American Tire and Rubber Co., at their directors' meeting on November 18, passed a resolution requesting the stockholders at the next meeting to increase the capitalization from $200,000 to $500,000 to supply the needs occasioned by the growth of their business. A new addition, 40 x 50, consisting of two stories and a basement north of the present plant, has been built for the manufacture of solid tires. Machinery for reclaiming rubber and for the manufacture of steam packing is being installed. The reclaiming is said to be a mechanical process and the company claims for its packing that its longitudinal fabric is compressed in such a manner that it has a marked tendency to retain its original form, thus giving it added expansion qualities.

* * *

The St. Louis Tire and Rubber Co., whose incorporation was mentioned in the November issue of the INDIA RUBBER WORLD will have the following officers: J. A. Swinehart, of Akron, Ohio, first vice-president and general manager, in full charge of the manufacturing end; H. C. Barker, of Carter, Collins, Jones and Barker, president and general counsel; William H. Glasgow, treasurer; and the following directors: C. C. Collins, vice-president of the Missouri Lincoln Trust Co.; Roy F. Brittain, assistant general counsel of the Cotton Belt R. R. Co.; Alfred E. Einstein, vice-president and general manager of the Union Electric Light & Power Co.; and C. N. Skinner, of Buxton & Skinner. In solids, the company expects to manufacture the "Krotz" tire, and a new pneumatic tire, every layer of the fabric of which bears an equal amount of strain. The company has bought fireproof buildings, already built, and will be in a position to place its goods on the market within a short time.

* * *

On November 12 a disastrous fire of unknown origin totally destroyed the palatial summer home of F. H. Mason, first vice-president of the B. F. Goodrich Co., at Turkeyfoot Lake. The loss is estimated at between $50,000 and $100,000. The fire is presumed to have started in the upper part of the house and was not discovered until it had gained a headway that could not be checked. The house was totally consumed within two hours. The blaze was discovered by one of the servants, and all escaped injury.

* * *

At a recent meeting of the stockholders and directors of the Miller Rubber Co., reports read by department heads showed an increase of this year's business over last year's of 60 per cent. In order to handle the immense volume of business and to be in a position to fill the many orders received for next year, the company is now erecting a new factory building 150 x 75 and three stories high. The land adjacent to and formerly belonging to the Franz Body Co., has been leased by the Miller Rubber Co.

* * *

A report of the Akron Chamber of Commerce shows that Akron has 144 industries employing 34,700 persons and has an aggregate capital of more than $142,000,000.

* * *

In view of the indisposition manifested by the local transportation company to provide the necessary accommodation for the growing needs of Akron, a proposal is being considered for the city to build the required extensions. According to the opinions of prominent citizens, by having a system of its own, the city of Akron will be in a position to take over the local company's lines in 1924, when its franchise expires.

THE RUBBER TRADE IN BOSTON.

By a Resident Correspondent.

BUSINESS continues about the same as last month's report, with the possible exception of the footwear industry. This is naturally the quiet time for that branch of the trade, as the winter stocks have been ordered and delivered, and until real winter sets in, the trade will be almost at a standstill. The call for heavy goods, however, has been disproportionately large, and the manufacturers are behind their orders on heavy Arctics and Lumbermen's. The tire business is exceptionally good, and new concerns are starting to get a share of the demand, while factories already established are enlarging their capacity. It is reported that one company, whose factory is as yet a hole in the ground, has had sales which will warrant a big output as soon as the plant is ready to begin manufacturing. The clothing business continues good, and the difficulty in securing fabrics has to some extent been overcome, and orders are now being filled in a more satisfactory manner. Taken altogether the trade is in good condition from one end to the other.

* * *

The event of the month in the rubber business has been the labor troubles at the Hood Rubber Co.'s factory at East Watertown, and the threatened extension of that trouble to the American Rubber Co. and the Boston Woven Hose and Rubber Co. in East Cambridge. Early in the month the Hood company posted a notice that the factory would shut down in all departments except the packing room, and the reason given was that there were changes to be made in the calender room, and some new boilers were to be installed. Immediately the agents of the Industrial Workers of the World, who had been recruiting members among the help, announced that the closing was a shut-out, done to intimidate the unionizing of the workers in this organization, and they immediately declared a strike, and proceeded to use forcible tactics to compel or induce those workers who were not laid off to join in the strike. As a consequence some violence and much excitement ensued, and, besides a siege of the works of the Hood company, the strikers formed processions and marched by the factories of the American Rubber Co. and the Boston Woven Hose Co., demanding that the employes of these companies join their ranks. This attempt was unsuccessful, even though the organization had already secured some members in these factories. The Hood factory was somewhat in a state of siege for a few days, and during the disturbances the mob was attacked by well-directed streams of water as well as by the police. Some arrests were made, and the matter culminated when one man was found dead with a bullet in him and another so badly wounded with a knife or other sharp instrument that he was removed to an hospital. The dead man and the wounded man had both, it is reported, stated their intention of going to work when the mill opened. Arrests have been made, but at present writing the authorities are not sure they have the murderers.

Meanwhile the repairs at the factory were continued and so far completed that the factory was opened in nearly all departments except the calender room, and little or no disturbance has resulted since the above-mentioned tragedy, which seems to have served as a deterrent on the part of the agitators and the strikers. Most of the help was taken back, though some, who had been active and aggressive, lost their jobs. The organizer of the society acknowledged the strike to be a failure, and has been endeavoring to secure for all strikers the positions they held previous to the shut-down.

* * *

"What is one man's loss is another's gain." The Boston newspapers had an advertisement in their "Want Columns" offering work to rubber shoe makers, and as a consequence about a hundred rubber workers secured jobs at the Beacon Falls Rubber Shoe Co., some 35 going one day and 65 the next. It is said that none of those applying were given employment unless they could speak the English language.

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The Fisk Rubber Co., of Chicopee, whose re-incorporation was mentioned in the November issue of THE INDIA RUBBER WORLD, will sell $1,000,000 of the new preferred stock, and with the proceeds will add to its facilities for manufacturing pneumatic tires for automobiles and bicycles, and will add thereto the manufacture of solid tires for commercial vehicles. The mills are being enlarged and an entire new four-story steel and concrete building 200 by 90 feet will be ready for the increased force of workmen by the first of the year. The company now employs a force of about 1,200 workmen, but, with these additions, it is expected that the output will be increased between 50 and 60 per cent. Harry G. Fisk, who was secretary of the older corporation, is clerk and treasurer of the newly incorporated company.

* * *

The Apsley Rubber Co., of Hudson, has its own factory, its own box factory and case plant, and now it will have its own printing establishment. Perhaps this is not exactly true in the strict sense, but practically so. For years the Worcester Printing Co. has been a leading industry in Hudson, not only doing a fine business for home concerns, but a much larger outside business. Much of the printing of the Apsley Rubber Co. was turned out from the presses of this establishment. Last month Hon. L. D. Apsley became sole owner of this big printing establishment, when he immediately changed its name to the Hudson Printing Co., and moved the Boston office from the Old South building to one of the three office-rooms of the Apsley Rubber Co. in Haynes building, corner of Summer and High streets. Mr. Worcester remains as manager and will spend the greater portion of his time at the Boston office, and the relations between the rubber company and the printing company are likely to be closer than ever.

* * *

Mr. Apsley is a good loser. One of the greatest admirers of Theodore Roosevelt, he wanted to see him again sent to the White House. He rather expected this to be the result of the election, and he hired the opera house at Hudson for election night and invited the whole population to come and hear the returns and rejoice with him. They came—or enough of them to fill the hall—and, as returns came in slowly, he entertained them with stereopticon pictures of candidates and scenery, and lest they should grow hungry bushels of doughnuts, cans of coffee and baskets of fruit were provided. When the hopes of the Progressive Party were absolutely and unqualifiedly dashed, Mr. Apsley caused a message to be written to the effect that, though people present might differ on political questions, they were unanimous for Hudson and its prosperity, and the crowd amended this by declaring themselves unanimous for Hudson's leading citizen.

* * *

Pine Banks Park is a beautiful natural park situated in Malden and Medford. It was formerly the property of the late Deacon E. S. Converse, of the Boston Rubber Shoe Co., who presented it as a public park to the two cities. It is in care of three commissioners from each city, and to them last month were presented two handsome deer about a year old. These were born on the estate of Col. Harry E. Converse at Marion, and the Colonel deemed the park a fitting place for them. An addition to the zoo at the park is being prepared, and the animals are to be a permanent added attraction to this beautiful place.

* * *

The new factory to be built in Lowell for the Patterson Rubber Co. will be of brick, four stories high and of modern mill construction. The foundation is already laid, and the contract was awarded about the middle of last month. It will be 210 feet long and 68 feet wide. The company proposes to install machin-

ery as fast as the building progresses, the heavy machines being put in as soon as the first story is completed, and so on through the building. The office building has already been erected, as is also a storage shed, and a two-story boiler house 40 by 68 feet will be built near the main factory. It is hoped that the company can begin work early next year, but it is not expected that the entire plant can be in full operation for three or four months. The enterprise starts under the most auspicious conditions, under the immediate personal management of John S. Patterson, for many years in charge of important departments of the Revere Rubber Co., who has associated with him his son, James M. Patterson; the Appletons, Francis H. and Francis H., Jr., and other capitalists. I understand that the product for the first year is already sold.

* * *

The completion of the fine new two-story office building at the plant of the American Rubber Co. at East Cambridge has enabled that company to combine its business forces in one building, and those portions of the purchasing, bookkeeping and record departments which were housed in the Boston office of the company on Essex street have been moved to Cambridge, where they occupy the second floor of the new building. General Manager N. Lincoln Greene will have his office in Cambridge, but, of course, will continue his Boston office, and will divide his time between the two. The Boston headquarters have undergone several alterations, which will result in more and better facilities for the display of samples and the accommodation of customers.

* * *

So important has grown the tire department of the Converse Rubber Shoe Co. that the company will soon build a three-story addition 125 by 65, to accommodate this new branch of the business. When the company secured the location for its factory, a larger lot was purchased than was needed at the time, in anticipation of future needs. Now, in addition to making rubber footwear, the company makes two or more patented styles of rubber heels, and has been eminently successful in turning out automobile tires, which have been in such demand that this new addition seems amply justified.

* * *

The Atlantic Rubber Co., manufacturers of mechanical goods and rubberized fabrics, have sold their factory at Hyde Park, and will seek new and larger quarters where they can double their present force and capacity, being justified in this move by the rapid increase of their business. Whether they will purchase a factory near this city, or will build a concrete factory on land owned by the company, is a question not yet decided upon. Meanwhile they have taken a temporary lease of a factory at Hyde Park, where they will manufacture until the question of relocation is settled.

* * *

The Metropolitan Raincoat Co., which purchased the plant of the Atlantic Rubber Co., will continue manufacturing under the name of the Hyde Park Rubber Co. Besides the factory buildings, this concern acquired some of the heavy machinery already in place, which it will utilize in its own enlarged business.

* * *

The Interchangeable Rubber Heel Co., of Taunton, which has been fitting up a factory in what was known as the Field Shop No. 2, has installed nearly all its machinery and expects to be turning out goods by the time this is read.

A new rubber concern which will locate in Stoughton is the Panther Rubber Co., which was recently incorporated with a capital stock of $150,000. The incorporators are Frank Bernstein and William Bernstein, of Chelsea, Massachusetts, and Mark Marcus.

It is stated that the factory recently vacated by the Plymouth Rubber Co. at Stoughton may be taken by the Elwell Rubber Co. for the manufacture of rubber heels.

THE RUBBER TRADE IN CHICAGO.

By a Resident Correspondent.

CHICAGO has among its business houses, representatives of practically all the large American manufacturers of rubber goods of all kinds. The city's telephone directory contains the names of several hundred wholesalers, general dealers, brokers and others who handle the manufactures of establishments in other cities. Especially long is the list of those who represent the factories making automobile tires. And yet, in all the long array of names of men connected with some branch of the rubber business there are not to exceed six or seven who manufacture rubber goods, who actually make any of the articles in which they deal. In very few cities in the world are so many automobiles in use as in Chicago. The demand for rubber tires for the hundreds of thousands of wheels on the machines is enormous. That demand constitutes the basis of a tremendous trade by manufacturers' agents, by jobbers and by an immense number of small dealers.

The question very naturally suggests itself: Why is not Chicago making its own automobile tires? Why is the great metropolis which is a leader in so many lines of business willing to sit by and use the output of the factories of other cities, some of which are mere villages compared with itself? Why are the wide-awake men who fear not to grasp the wheels of direction in practically every other manufacturing line of business content to allow Akron, Detroit and other places to occupy the field in connection with this one line of trade?

Does the often-heard statement that labor is higher in Chicago than in Detroit and Akron answer these questions satisfactorily? Is labor higher here than in the cities named? Not so far as can be learned from any comparison based on results of inquiry. Again, is it a full explanation of the situation to assert that there is a material difference in the freight rates between ports of importation and points in Ohio and Michigan and the rates between those ports and Chicago? Is it not a fact that the ultimate freight charges on the manufactured articles from the places of manufacture to this city are more than an offset for any such differences?

In practically every line of business in Chicago trade is good. Factories of all kinds are running full time; many of them are in operation over-time. Manufacturers, jobbers, commission men and retailers are all busy. Collections are good. All reports concerning the early holiday trade agree in the statement that never before in the history of Chicago have the demands been so large for high-grade, high-priced goods as during the year just drawing to a close.

Nearly all lines of rubber goods trade in Chicago have shared in the general conditions. Here and there special reasons have operated to lessen the volume of trade and make demand slight compared with that for other manufactures of rubber. The trade in garden hose is a large factor in the rubber goods business throughout the Northwest and West. In those sections the calls for garden hose are comparatively light. Last season was a very rainy time all over that part of the country. The retailers had comparatively few calls for hose.

In all other lines of mechanical rubber goods, business is reported excellent. Favorable conditions have prevailed throughout the year. Improvement in the tone and the volume of demands has increased as the season has advanced. The cement factories all over the West and Northwest are doing a tremendous business. That, of course, means heavy calls for the output of the manufacturers of mechanical rubber goods. The paper mills are running at full blast. And there, again, is occasion for calls upon the dealers in the required rubber goods. With steel works adding their demands, the jobbers' and manufacturers' agents are busy.

Dealers in rubber boots and shoes report a year of most satis-

factory business, with no sign of discouragement for the future. The fine weather of the last few weeks has enabled the dealers to "straighten out," and business is moving now in the most satisfactory manner. The Chicago manager of the Standard Rubber Shoe Co., with headquarters at 311 West Monroe street, says the record of the year has been most pleasing to his company, and he looks for a continuance of good times in the rubber boot and shoe trade. The Chicago house of the Beaver Falls Rubber Shoe Co., 207 West Monroe street, reports business good and expects that 1913 "will be the best in history."

* * *

Chicago continues to be one of the world's largest patrons of the manufactories of rubber tires. Every local representative of the factories who could be reached by personal call or by telephone reported everything satisfactory in regard to the prospects for 1913.

In druggists' sundries and similar manufactures of rubber the same prosperous conditions are reported. The demand for fire hose increases just about in proportion with the increase in population. Additional purchases are made in some population centers because of discovery that hose on hand is of inferior quality and likely to prove practically useless in case of emergency. As a general rule, however, the calls on the hose manufacturers keep up with the requirements caused by growth in population. In all departments of the "hard rubber" trade in Chicago, business is reported excellent.

* * *

H. W. Fauver has come here from Indianapolis to take position as assistant manager in the Chicago headquarters of the Diamond Rubber Co., 1523 Michigan avenue.

THE RUBBER TRADE IN CINCINNATI.

By a Resident Correspondent.

WITH the election over and the political battles fought, rubber manufacturers and dealers are now down to hard work again to make the year just closing a banner one for their individual institutions. In the rubber clothing trade the weather this fall has been all that could be desired to encourage large orders in this line. Perhaps no other line has shared so well in the prosperity of the city as did the rubber tire industry, and from all local houses comes the same report—"Business is very good."

* * *

Perhaps there was no one person in the country who worked harder for the re-election of President Taft and felt the President's defeat more keenly than did Fred A. Geier, vice-president of the Cincinnati Rubber Co., who was the president of the "Prosperity League" that had its headquarters in this city and was a power in getting before the business men of the country arguments in favor of Mr. Taft's administration.

* * *

The Dayton Rubber Manufacturing Co., manufacturers of the Dayton Airless tire, and termed the "Air Free Care Free" tire, has opened a branch in this city at 803 Race street. B. H. Pfister has been appointed manager in charge for this territory.

* * *

Bumiller & Remlin, local agents for several leading makes of automobile, motorcycle and bicycle tires and dealers in automobile and bicycle accessories, have installed a unique feature in connection with their establishment. This concern, located at 412 Main street, is in the heart of the business district. They have installed at the curb in front of their establishment a reservoir for the purpose of supplying air to all automobile and bicycle owners, free of charge. The supply of air is furnished through the agency of an electrically-operated pump that fills and refills the reservoir automatically, and air is available every day and night throughout the year, the only requirement being a key, which the firm is distributing free to all automobile and bicycle owners on application. The firm has had 500 keys made, and most of them have already been distributed.

* * *

The rubber manufacturers and jobbers maintaining branch houses in this city, which are the distributing points for the central West and South, are unanimous in praising the results obtained by the Merchants' and Manufacturers' Association in the development of the package car system, which is proving a benefit to Cincinnati shippers. The main development is the issuance by the association of shipping guides by which shippers are enabled to judge before shipment what routing to give a package to insure its earliest delivery at its destination. Package cars leave Cincinnati direct for the following distributing points west and southwest and northwest: Chicago, Akron, Denison, East St. Louis, Houston, Kansas City, Little Rock, Memphis, St. Paul, Minneapolis, Peoria, St. Louis, Shreveport (Louisiana) and Vicksburg (Mississippi). At these points package cars start in various directions. A post card accompanies each invoice, giving the date of shipment. The consignee marks on it the time of receipt and puts on it any complaint as to delay. This enables the association to take up with the railroads any just complaints, and the railroads are co-operating to remedy any delays in delivery and appreciate highly the work the association does in locating the blame for delay. A sticker is put on every invoice and on every package. Local managers for the rubber houses who have a large number of shipments each week, and mostly shipments requiring prompt delivery, are enthusiastic over the results the association is obtaining in supplementing the work of the railroads.

* * *

Arthur Jack, for several years active as Cincinnati newspaper man and later engaged as city sales agent for the Diamond Rubber Co., at Minneapolis, has returned to this city to serve in a similar capacity for the Diamond Rubber Co.

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Urged on by widely expanding trade, the United States Tire Co., which operates a branch house at 1121 Race street, has just added two new salesmen to its already large staff—W. C. Price and J. A. Moore.

* * *

I. Z. Stone, of the Diamond Rubber Co., spent several days in the city and while here took advantage of the opportunity of mixing with automobile owners and talking Diamond tires. In speaking of the several fallacies that it seems impossible to get out of the average automobile owner's mind, Mr. Stone said: "The belief that hot weather and road friction increase the air pressure in a tire to a dangerous point, cost the car owners of this country millions of dollars every year. Because of this fallacy thousands of car owners habitually travel on under inflated tires, the 'soft' tire becomes bruised and cut, and before long there is a blow-out. The internal friction in a tire caused by the bending of the material, especially the fabric, does heat the tire, but the softer the tire the greater the bending action and the more internal heat. The increase in air pressure due to heat is not nearly as great as the car owner thinks. To get maximum mileage, the car owner should inflate according to a very simple rule—the pressure per square inch as shown by the pressure gauge should be 18 times the tire's cross section in inches. For instance, a 3½-inch tire should always be inflated to 63 pounds, a 4-inch tire to 72 pounds, and so on, regardless of hot or cold weather."

* * *

The I. J. Cooper Rubber Co., located at 717 Main street, has increased its capital stock from $10,000 to $100,000. The company deals in rubber accessories for bicycles and automobiles. Although the company has been in business a little less than a

year, the business has almost doubled in that time and branches have been established in Columbus and Dayton.

* * *

Cecil F. Adamson, of East Palestine, Ohio, filed suit in the United States District Court here against J. Everett Inman and George Inman, proprietors of the Victor Inner Tire and Rubber Co., of Dayton, Ohio, for alleged infringement of a patent on improvements in tire vulcanizing repair apparatus. He asks damages in the sum of $5,000, an accounting and an injunction restraining the defendants from further infringement of his patent.

* * *

Creditors of the Ohio Motor Car Co., which was placed in the hands of a receiver last month on application of the Diamond Rubber Co., filed a petition of involuntary bankruptcy in the United States District Court. The petition alleges that a specific act of bankruptcy was committed by the company by settling the claim of certain creditors in preference to others.

* * *

F. J. Ramler, formerly with the United States Tire Co., has joined the selling force of the Racine Rubber Co. as general representative for this territory. The local distributor for the product of the company—the Kelly-Racine tires—is the I. J. Cooper Rubber Co.

* * *

The Ideal Steel Wheel Co., a new Cincinnati corporation, has purchased the former plant of the Seufferle Cooperage Co. at Winton Place, paying, it is reported, $41,000 cash for the property. The corporation expects to revolutionize the automobile tire industry by the introduction of a solid tire, made possible through the manner in which the wheel is constructed. President J. B. Fitch of the company stated that the property would be greatly enlarged at an early date. The general dimensions of the main building are 200 x 226 feet, together with several minor structures. Since the latter have strong foundations it is the company's intention to utilize these and connect the whole in the very near future with an immense addition.

* * *

The Ajax-Grieb Rubber Co. is represented in this city by Hanke & Rothe, who have opened warerooms at 803 Race street and are handling the product of this company exclusively.

* * *

The Motz Tire & Rubber Co. of Akron has started active competition for business in this city and territory. An agency has been established with the Selden Auto Agency at 109 East Liberty street.

* * *

The Federal Motor Supply Co., which was recently incorporated in this city, has leased the buildings at 919 and 921 Race street and, after remodeling is finished, will open for business in about 15 days. The company will operate as wholesale and retail dealers in rubber accessories, parts and supplies for automobiles, truck, motor boats, air vessels and bicycles.

* * *

The scrap rubber trade is fast developing into one of Cincinnati's leading commercial lines. Until the advent of the automobile, dealers in rags and papers bought scrap rubber as a side line. Now there are two concerns in the city which are making a specialty of scrap rubber. These two concerns are M. Rider & Co., who operate a big plant at 113 and 115 Sycamore street, and Klein & Cohn, who have a large establishment recently fitted up and equipped for handling scrap rubber at 731 Reading Road.

THE RUBBER TRADE IN RHODE ISLAND.

By a Resident Correspondent.

CONSTANT increases in output were made during November by the manufacturers of rubber shoes, arctics and boots. The unusual mildness of the season did not seem to affect business in Rhode Island, and in many instances factories ran well into the evening in efforts to keep up with their orders. One concern, the National India Rubber Co., of Bristol, sent shipments as far west as California. These latter were confined to insulated wire, which is being made in immense quantities in the new department which this concern opened, following the transfer of the manufacturing of sundries to Cleveland, Ohio.

* * *

The United Wire and Supply Co. has declared a quarterly dividend of 1¼ per cent. on the preferred stock and one per cent. on its common stock.

* * *

The International Rubber Co. at West Barrington, is increasing its output regularly. It now operates until 9 o'clock each evening.

* * *

A suit for $10,000 was filed in the Superior Court at Providence on Thursday, November 21, by Michael Mountain, of East Providence, against the Uniform Seamless Wire Co., of Providence. The plaintiff alleged that the fingers of his right hand were crushed as the result of a defect in the machinery at which he was working on February 20.

* * *

Owing to a misunderstanding the International Rubber Co., of West Barrington, started to erect a vulcanizing room at its plant in West Barrington recently without obtaining a building permit from the Barrington Town Council. When the attention of officials of the concern was called to the matter an effort to legalize the work was made. The company sent blue prints and a lengthy explanation to the town officials, and the Council voted that it would grant the belated permit.

The officials of this company are endeavoring to locate a place for a new manufactory to be started in New York, but thus far no plans have been decided upon, and the nature of the business has not been announced. At the present time this firm manufactures rubber textiles.

* * *

Although Providence dealers have been experiencing difficulty in securing sufficient coal to satisfy the terms of their contracts for several months, the National India Rubber Co., at Britol, has had large orders filled by the New York operators, and has been storing immense quantities for use during the winter.

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John Anderson, foreman of the shipping department of the wire department of the National India Rubber Co., and Miss Cora F. Shaw, of Fall River, Mass., were married at the home of the bride's parents on November 11.

* * *

The stores of the Diamond Rubber Co. and the B. F. Goodrich Co., of Providence, have been combined at 260 Weybosset street. Although the companies combined last spring, separate stores have been maintained in this and other cities. The separate lines, made by these companies which have been manufactured since the consolidation, will still be carried at the new store. George Coleman has been appointed business manager. Originally the Diamond company store was at 200 Washington street, and the Goodrich company at 392 Weybosset street.

* * *

Col. Samuel P. Colt has started the work of beautifying that part of Bristol which lies near his estate. A steam shovel has

arrived and big embankments are being raised where he will transform a neglected lane into a wide avenue which will pass over the tracks of the New York, New Haven and Hartford Railroad. A bridge 700 feet long will be a part of the improvement. This is another of a long list of improvements which Col. Colt has given to the town, where one of the largest plants of the United States Rubber Co. is located.

* * *

The Bourn Rubber Co., of Providence, which recently began the manufacture of automobile tires in addition to making overshoes, is widely advertising its new product as the Bourn-Goodyear tire. They claim for it that it costs from 10 to 15 per cent. more than other high grade tires to manufacture, but that the retail price is the same. The company is also emphasizing the fact that it has no connection, directly or indirectly, with any other tire manufacturer. The concern was established in 1840.

* * *

Rebuilding tires is now one of the industries of Providence. The Invincible Puncture Proof Tire Co., of which Charles H. Graves is president, is taking old tires at its plant, 53 Sabin street, and making them over and guaranteeing 3,000 or more miles.

* * *

Rhode Island manufacturers are congratulating themselves that they are not having trouble with the "Industrial Workers of the World," like that which some of the other rubber companies have encountered. Organizers of this body have made repeated attempts to gain a foothold here, but their demonstrations have been dealt with vigorously by the police, and public sentiment is so strong against the militant tactics of the "workers," that they have practically no representative in the state at present.

THE RUBBER TRADE IN SAN FRANCISCO.

By a Resident Correspondent.

E. C. TILSLEY, with offices in the Call building is now promoting a company for the purpose of manufacturing and selling a new substitute for rubber. A man by the name of J. H. Schwartz, now of this city, is the inventor of the process, and he claims that it has attained the desired degree of perfection to successfully compete with the genuine product. He has been working on the basic mineral called Gilsonite, for seventeen years, making it up in different combinations until he at last arrived at a result which appealed to him as thoroughly satisfactory. Gilsonite is a black mineral found in large quantities in Colorado, Utah and Nevada. It is a light substance and feels something like a piece of hard tar, or hard metallic rubber. Mixed by Schwartz's chemical process it becomes a crude mass with much resemblance to crude rubber, although more gritty and brittle. After being subjected to a vulcanizing process, however, all sorts of rubber products are produced, which the inventor claims are in every way equal to those made from genuine rubber.

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The Pennsylvania Rubber Co. has opened a fine large branch at Seattle, Washington, and J. E. French, the Pacific Coast manager for the company, who has his headquarters in San Francisco, has returned from that city where he attended to the details of installing the new store. G. J. Brooks, who was the chief clerk in San Francisco has been placed in charge of the Seattle branch. The store is located in the Armory building, and it is the finest store which the company has on the Pacific Coast. It is fitted up in most excellent style, and has every modern convenience, and having 9,000 square feet of floor space, there is plenty of room to carry a large stock. This gives the company a firm hold on the business of the Northwest, as besides the new Seattle store they have a distributing agency with the Yakima Hardware Co., of North Yakima, Washington, and another with the Morrow Drew Co., of Walla Walla. In Oakland, California, the company has made a find in the person of Robert Martland, a pioneer tire man of that city who has a store on Broadway. Mr. Martland is one of the live wires in the tire business, and he has taken hold of the company's Vacuum Cup tires in such a whirlwind campaign that the company is unable to supply him with enough goods. Mr. Martland has imparted his enthusiasm to all kinds of prominent people and even had a Superior Court judge doing some non-skid stunts out on a slippery road for the sake of demonstrating his firm belief in the tires.

* * *

The Superior Vulcanizing Co. has been incorporated at Bakersfield, California, with a capital stock of $20,000, practically all paid up. A. W. Albrecht holds the control, and A. Albrecht and Geo. A. Baer are also owners in the business.

* * *

The Firestone Tire & Rubber Co. has already started work on the foundations of an elegant new building which the company will occupy as soon as completed. It is located on Van Ness avenue between Bush and Pine streets. The building will be completed early in the spring. When the Firestone company established a branch in San Francisco two years ago it erected a three-story building on Van Ness avenue and Fulton streets. Recently the city has been purchasing property in order to establish a great civic center, and this property is included in the civic center and has been taken by the city. The new building will be a two-story structure and will be large enough to accommodate an immense stock. Mr. W. H. Bell, local manager of the company, has just returned from a visit to the factory in the east.

* * *

C. E. Mathewson, Pacific Coast manager of the Diamond Rubber Co., says that the popular belief that hot weather causes the tire pressure to increase and injure the tire, is not only a fallacy, but costs automobile owners millions of dollars every year. "In hot weather," he said, "they are afraid to pump their tires full, and the result is that the half filled tires wear out in half the time."

* * *

The W. D. Newerf Rubber Co. has opened a retail service shop and store at Van Ness and Golden Gate avenues. The company's warerooms are on Mission street.

* * *

J. M. Gilbert, of New York, general manager of the United States Tire Co., is expected in San Francisco in a few days. He will be met by C. A. Gilbert, the Pacific Coast manager in Seattle, and from there they will make a complete tour of inspection of all of the Pacific Coast branches.

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Henry Byrne is no longer connected with the Quaker City Rubber Co., having recently accepted a position with the Plant Rubber & Supply Co.

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Mr. Gibson, who was formerly with the Sterling Rubber Co., has quit the rubber business to take up the agency for a new electric heating device attached to faucets for heating water.

* * *

Mr. Oliver, who was formerly superintendent of the factory of the American Rubber Co., at Emeryville, California, has gone into business for himself, having opened a shop on Broadway, in Oakland, where he makes automobile tubes, and patches only.

* * *

Elliott Mahan, a rubber planter of Colombo, Ceylon, has been a recent visitor in this city. He is on his way to Edinburgh, Scotland, for an extended visit.

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The Acme Rubber Co. has been incorporated in San Francisco with a capital stock of $100,000, the shares being of the value of $1 each. The organizers are L. Seidenberg, G. M. Davis, W. S. Baker, J. C. Montgomery and P. Kenrick.

THE RUBBER TRADE IN TRENTON.

By a Resident Correspondent.

THE Roberts Manufacturing Co., of Trenton and New York, which was incorporated November 22, for $1,000,000 under the laws of Delaware, plans to manufacture sectional inner tubes for automobile tires on an extensive scale, at the plant which the company proposes to erect in this city. Frederick T. Roberts, of this city, the promoter of the new company, was one of the incorporators, along with Frederick L. Guggenheim and Edward Howitz, both of New York City, and Walter L. Watson, of Weehawken, New Jersey.

The company is organized to manufacture and sell rubber goods of all kinds, but Mr. Roberts declares that the main business of the corporation will be the manufacture of the patent inner tube automobile tires. These sectional inner tubes are of the pneumatic order, but constructed along entirely new lines. There are ten sections of a tube to each tire. Each section has thirty-two cells running the length of each section, and each cell is filled with compressed air, and then the ends are vulcanized to prevent the escape of the air.

When the inner tubes are placed in an outer tube or shoe they make a complete circle with close fitting joints. The advantage is that when a puncture occurs only a single section is destroyed, if it is destroyed at all, instead of the entire inner tube. By reason of the fact that there are thirty-two longitudinal cells, it is claimed that in an ordinary puncture the air would be let out of a small number of the cells and that the progress of the machine would not be seriously interfered with. By the use of these sectional tubes it is claimed that autoists will not be obliged to carry extra tires on the machine. Only one or two additional sections will be required. The sections are about ten inches in length.

The patent inner tubes are now being manufactured at the plant of the United and Globe Rubber Co. in this city. The placing of compressed air in the cells, and the vulcanizing of the ends of the sections is being done at the plant of the Roberts Co. on Pike street, this city. Mr. Roberts believes the patent sectional inner tube is perfect, and says he has been working on the sectional inner tube for the past two years, and that tests have demonstrated the superiority claimed by the company. The tubes are so constructed that they will fit any rim or shoe on the market.

FROM THE SAYINGS OF SQUANTUM.

Reno—a name suggestive to the ordinary lay mind of divorce and alimony—not to mention subsequent matrimony—has according to so eminent an authority as Squantum, a good Indian chieftain, famous in song and story another meaning, to wit: "lack of attention," which; after all, has no doubt been the forerunner of the conditions first suggested. The late Mr. Squantum, who in addition to being an authority on definition, is a sort of reclaimed sponsor for the Monatiquot Rubber Co., South Braintree, Massachusetts, pledges his aboriginal credit that Monatiquot stocks are not RENO-VATED, but are reclaimed in most—if not all—of their original virtue.

NO EXHIBITION RUBBER IN THE MARKET.

As some manufacturers have reported that they have been approached with the offer to sell them some of the crude rubber that was on exhibition at the recent New York rubber show, it may be well to state that there is none of this exhibition rubber on the market, as all of it was sold on the last day of the exhibition direct to manufacturers.

ANOTHER INCREASE IN CAPITAL.

THE Knight Tire & Rubber Co., of Canton, Ohio, has increased its capital stock to $1,500,000. The increase in the capital stock is to provide a larger working capital and for future improvements and additions to the plant.

OBITUARY RECORD.

DEATH OF FRANK W. GREENE.

FRANK W. GREENE, crude rubber broker, of 150 Nassau street, New York, died October 31 of pleurisy at his apartments in the Standish Arms, Brooklyn. He was 73 years of age.

Mr. Greene first became connected with the rubber business in 1870, when he was a member of the firm of Randall H. Greene & Sons, of which his father was the head. In 1883 he opened a rubber brokerage office of his own and was continuously in this business until the time of his death, acting strictly as a broker, and for the greater part of that time as a general broker, though for ten years—from 1888 to 1898—he acted as a special broker for John Kenyon of London.

Mr. Greene was born in New England and was a fine exemplar of the characteristic New England virtues—by which he came quite naturally, as his ancestors settled in that part of the country about 250 years ago. He was a man of quiet tastes, and divided his time between his office and his home, but he had many stanch friends among the rubber men of his generation, among them such well-known and substantial characters as John B. Forsythe, Amadee Spadone, John H. Cheever and William H. Acken. He was deeply interested in everything that pertained to the rubber industry and, incidentally, he had been a subscriber and reader of this publication almost from its initial issue.

He is survived by his widow, one son, Irving W. Greene, and a grand-daughter, Mildred, to whom he was much attached. His son was formerly associated with his father as a rubber broker, but is at present connected with F. W. Devoe and C. T. Reynolds, the paint manufacturers.

THE DEATH OF A RUBBER FOREMAN.

William Folsom, for many years a foreman in the works of the Revere Rubber Co., Chelsea, Massachusetts, died on November 8, in that city, at the age of 68. Mr. Folsom was a veteran of the Civil War and belonged to the Theodore Winthrop Post.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufacturers of india-rubber and gutta-percha from the United States for the months of August and September, 1912, and for the first nine months of five calendar years:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
August, 1912.....	$269,239	$196,415	$763,659	$1,229,313
September, 1912....	237,546	163,809	660,097	1,061,452
January-July	1,381,648	654,464	4,592,615	6,628,727
Total, 1912.....	$1,888,433	$1,014,688	$6,016,371	$8,919,492
Total, 1911.....	1,701,441	1,349,380	5,402,984	8,453,805
Total, 1910.....	1,592,594	1,664,215	4,258,968	7,515,777
Total, 1909.....	1,301,497	1,127,806	3,059,146	5,488,449
Total, 1908.....	926,566	1,043,528	2,629,927	4,600,021

The above heading, "All Other Rubber," for the months of August and September, 1912, and the first nine months of the two calendar years, includes the following details relating to tires:

Months.	For Automobiles.	All Other.	Total.
August, 1912	405,781	46,937	452,718
September, 1912.....	292,809	50,002	342,811
January-July	1,835,045	346,504	2,181,549
Total, 1912.....	2,533,635	443,443	2,977,078
Total, 1911.....	1,941,773	437,201	2,378,974

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

EXCEPT for the general reason that it is the main topic of the moment, there is no particular reason why I should refer to this subject. I believe I am correct in saying that in none of the five States at war is there a rubber works in the regular sense of the term; but, of course, a considerable business is done in imported rubber goods. This business will naturally be hampered in the same way, though to a less important extent, as has occurred with—for instance—cotton goods, the export of which from Lancashire has for the time entirely ceased. This will not affect the staple Lancashire trade to any great extent, because business generally is very brisk and the merchants have other and more important markets to absorb their attention. In certain cases, however, I hear of mills running on short time, or even closing down, owing to the stoppage of business in the Near East. With regard to imported rubber goods, Turkey is the most important Balkan State. Goloshes come mainly from America and Russia, the latter country having largely increased its trade in South Eastern Europe in late years, a fact due, no doubt, to a large extent, to the common basis of the Slav languages. For many rubber goods, such as mackintoshes, there is very little demand. Probably the rubber imports which have shown the greatest expansion in quite recent years, are motor tires. Since I was in Montenegro the mail car has been converted from a low-wheeled horse vehicle to a motor car, which appears to tackle the 4,000 feet rise from Cattaro to Cettinge without difficulty. The road, I may say, although a monotonous zig-zag, is otherwise a very good one and far superior to any to be found in northern Albania, these being mainly rough tracks freely strewn with boulders. Metalled roads in Montenegro are, however, by no means universal, a fact which does not disconcert the natives, who tackle rocks, as their goats do. The ordinary footwear is an untanned laced calfskin sandal, as leather boots have a very short life on the rocks. Needless to say that Montenegro offers no inducements to the establishment of a golosh store. A largely increased (though it is to be hoped ephemeral) demand is for hospital bandages, etc., as part of the equipment of the various Red Cross League parties that are being dispatched to the theatre of war by Great Britain, Russia and other countries.

THE BALKAN WAR.

WHETHER it is due to inconsiderate usage or to decline in quality I am not in a position to say, but one hears general complaints with regard to these goods. Since a certain legal case of a few years ago, when an action for damages was brought against a chemist, as seller of a bottle that burst when in use, shop keepers have been somewhat chary in giving guarantees. Nowadays some sellers will not give guarantees, while others will give a twelve-month guarantee on the understanding that only hot, but not boiling, water is to be put in them. A good many people, I understand, have given up the use of the more convenient rubber bottles in favor of the glazed stone-ware article, owing to fear of the former bursting at an inopportune time. With the stone bottle the water can be put in at the boiling temperature, the heat being retained for a longer time than in the rubber bottle. I heard recently of a nursing institution, formerly a large user of rubber bottles, which has now entirely given them up. It would, therefore, seem clear that this article, like elastic thread, should be made of one quality only—the best—and that price cutting should be sternly discountenanced by all manufacturers. Exactly how this end is to be attained, I will leave to others to decide.

HOT WATER BOTTLES.

THE number of different advertisements relating to mineral rubber or natural asphalt as obtained in America is a pronounced feature of our trade literature, and those on this side to whom the subject is of interest confess that they are somewhat bewildered. They are wondering whether so much as is claimed really depends upon the special trade mark of the package, or whether there is a certain amount of bluff, owing to close trade competition. Far be it from me to attempt shedding light upon such a dark mystery, but I may perhaps make a few general observations. These asphaltic bodies certainly seem to have substantiated their claims to utility in a variety of rubber mixings, and there can be little doubt that the demand will increase. I have been asked if there is any difference between these natural products and coal tar pitch, which is so largely produced in Great Britain for home use and export. I certainly find a distinct difference not only in chemical constitution—a matter not of great moment—but also in physical properties, particularly in flexibility. The ordinary coal tar pitch is much more brittle at any rate than the particular American products I have had under test. The instrument known as a penetrometer, used in America for differentiating qualities of solid mineral hydrocarbons, does not appear to be much known in England. The manager of one of our largest pitch works tells me that he has heard of its use in America, but knows nothing about it himself. Perhaps our editor could do something to dispel the cloud of ignorance on this side by giving a sketch and brief description of the instrument in use in America. The article on "Mineral Rubbers" in THE INDIA RUBBER WORLD for October is very interesting, though one regrets that the geological illustrations are not explained in the text. For instance, what is the nature of the country rock through which the elaterite vein courses. I am familiar with the limestone district in Derbyshire, where the mineral rubber has long been known. Here it usually occurs in the lead veins at the top of the limestone, where this latter is covered by the black Yoredale shales. Small quantities of mineral oil have in past days been tapped by the lead miners, and it is on record that men have been killed by explosion of petroleum vapor. Owing to its intermittent occurrence in the veins, elaterite has never been commercially worked in England, though quite recently asphalt works have been established at places where the limestone is strongly bituminous.

MINERAL RUBBER.

THIS subject is being investigated by Mr. S. T. Peachey at the Manchester School of Technology, and a preliminary paper giving his results to date was given by him at a meeting of the Manchester Section of the Society of Chemical Industry, on November 1. Special reference was made by the author to the work done recently by Herbst, who passed oxygen through a solution of rubber in benzine and obtained 86.4 per cent. of a body $C_{10}H_{16}O$ in solution, and 1.7 per cent. of an insoluble yellow body $C_{10}H_{16}O_2$. The author's experiments were carried out in a different manner, a thin film of rubber being deposited from solution inside a glass flask, and this being acted upon by a measured volume of oxygen at a temperature of 85 degs. C., until no further oxygen was absorbed, as registered by a gas burette. The rubber used at first was plantation crêpe, freed from resin by acetone. This was found to undergo complete oxidation in 35½ hours. Further experiments were made with the same rubber, which had not had its resins removed, and it was found that the time for complete oxidation was much prolonged, ninety-nine hours being required. The amount of resin

THE ACTION OF GASEOUS OXYGEN ON INDIA RUBBER.

in the rubber was 3.00 per cent. Analysis of the product showed that each $C_{10}H_{16}$ reacted with four atoms of oxygen, the results therefore not being in agreement with those obtained by Herbst. In the discussion which followed the reading of the paper, Mr. H. L. Terry referred to the figures published by Burghardt in 1883 relating to the oxidation of vulcanized elastic thread, and supported Burghardt's statement that the percentage of water found in decayed rubber formed a good index of the amount of deterioration which had taken place. He (Mr. Terry) had observed that where the rubber had oxidized to the degree at which it could be powdered in a mortar, the amount of water was always greater than in the earlier stages of oxidation, and further that the harder the rubber was the greater was the amount of free acid present. He thought that Mr. Peachey's experiments were of great interest, but would prove of more practical importance if applied to vulcanized rubber. The rate of oxidation of rubber was very largely a matter of tenuity, and conclusions must not be drawn too hastily with regard to rubber goods generally, on the basis of the extremely thin films used by the author. Professor Perkin inquired whether the oxygen used was dry or moist, as he would expect a different result in each case, and was any volatile body produced? The answer was that the oxygen used was saturated with moisture, and that some drops of an oily liquid were volatilized. Mr. S. Frankenburg suggested that if the author had used Brazilian Pará instead of plantation rubber, he would have found that a much longer time was required for oxidation. In the course of discussion when the meeting was over, some visitors from rubber works expressed surprise at the resinous rubber giving better results than the resin free—this not being in accord with their practical experience.

SELECT COMMITTEE.

A COMMITTEE, consisting largely of members of Parliament, belonging to both political parties, has been appointed by the government to inquire into the Putomayo atrocities, and, in particular, to decide whether or no the Englishmen on the board of the Peruvian Amazon Company are to be censured for what has taken place. An application made to the courts for the removal of Senor Arana from the position of liquidator in the present voluntary liquidation, has been adjourned until the above committee gets to work.

Another committee has been appointed to inquire into the matter of the celluloid goods manufacture in Great Britain. This is the outcome of a fatal fire which occurred in London a few months ago. These committees, though of a lower status than a royal commission, have much the same powers. Witnesses may be examined on oath, and persons whose actions come into question may be represented by counsel. The proceedings are always open to the reporters of the press.

FIRE HAZARDS IN RUBBER MANUFACTURE.

THE article on this topic in the "Weekly Underwriter," and reproduced in THE INDIA RUBBER WORLD of October 1, is of interest, though all manufacturers will not agree with it throughout. We read that in making rubber cement the rubber is softened in carbon dioxide; presumably carbon disulphide is meant, though it is not customary in this country to use any special softener before dissolving in naphtha. The dangers attached to this branch of the manufacture have often been exaggerated, and what trouble has arisen has usually occurred after it has left the manufacturer's hands. It seems to be going rather too far to expect the manufacturer who knows his business and its associated risks, to restrict himself closely to the amount of cement he has on hand at any particular time. With regard to danger of firing from static electricity, I suppose a case does occur every two or three years. This will be when the atmosphere happens to be very dry. The suggested precaution of "grounding" the machines has been followed to some extent in this country, but a good system of ventilation where naphtha vapors are heavy, will obviate any danger. I have no experience of the danger alleged to exist in the buffing department, and pass on to the chemical room. It is entirely news to me that "barium sulphate" is a rapidly oxidizing metallic substance which is a frequent source of trouble if allowed to become damp. The writer seems entirely off the track here, and I am sure there is no truth whatever in the statement. With regard to unslaked lime becoming slaked and setting fire to things about it, this is quite possible, though the probability is quite remote, at any rate in this country, as all the lime sold for rubber purposes, though nominally the oxide of calcium, is always partially hydrated before sale. The reference to lamp-black is important—too important to be adequately treated in a couple of sentences. There are plenty of instances where blacks have suffered spontaneous ignition in rubber works, but a great deal depends upon the nature and origin of the black. In my experience calcined lamp-black is quite safe—it is certain qualities of vegetable black that always have danger associated with them, and these should be stored in a suitable place apart from anything of a combustible nature.

THE GORTON RUBBER CO., LIMITED.

The annual meeting of the Gorton Rubber Co., Ltd., Manchester, England, was held November 9. There was a large attendance, including all the directors; George H. Cartland (chairman) presided. F. Walmsley and W. H. Veno were re-elected directors. This was immediately followed by an extraordinary general meeting, at which it was resolved unanimously to increase the capital of the company by 30,000 pre-preference shares, 20,833 of which will be issued to the present shareholders at the rate of one new share for every three shares now held. This was agreed to by a separate meeting of the preference and ordinary shareholders. It was stated that the orders on the books at the present moment are double the number at this time last year.

NEW LONDON RUBBER FIRM.

A new firm, under the style of Ritter & Hankin, has been formed in London, as importers of and dealers in india rubber, gutta percha and balata, at 27 Mincing Lane. The partners are Alfred Westendarp, M. A. Ritter and George Hankin, all of whom have long been engaged in the india rubber, gutta percha and balata trades, both as importers and dealers.

MISTOVSKI BECOMES MINTON.

Louis Mistovski, a merchant dealing in raw rubber in the Trevelyan Buildings, Manchester, England, announces that he has changed his name to Louis Minton, and that hereafter he will transact all business under that name.

THE PERCENTAGE OF RUBBER IN ENGLISH CASINGS.

One of the American consuls in Great Britain has been looking into the possible tire market in that kingdom for American tires. According to his opinion, it ought to be possible to sell American tires there because of their better quality. He writes as follows:

"Despite the large sales of American automobiles here, American tires have not been introduced into the United Kingdom to the degree that might have been expected, especially as it is stated that there is more actual rubber in the American article than there is in the British or European product, in which, it is said, there is not more than 7 to 10 per cent. of rubber in the outer casing and 35 per cent. in the inner tube, substitutes and fillers being extensively used."

The Empire Rubber Co. (Messrs. E. Hodgson & H. Waterhouse), of the Leeds Old Rubber Works, pioneers of the scrap rubber trade in Yorkshire, England, have recently purchased the business of the Union Rubber Co., of Leeds, and have again added to their premises by leasing extensive ground adjoining, including the wholesale premises so long occupied by the late John Robshaw in St. Columbia street, Leeds.

THE SETTLEMENT AND TAXATION OF AMERICAN FIRMS IN GERMANY.

IN dealing with the above subject in the Bulletin of the American Association of Commerce and Trade, Berlin, Dr. Paul Marcuse of that city points out that foreign persons over a year resident in Germany, or engaged in doing business there are subject to the same taxes as German subjects. These taxes come under four heads—income tax; tax on personal property and capital; real estate tax; and tax levied on all persons personally engaged in business (Gewerbe Steuer).

The chief point at issue being that of "doing business," it is of interest to note that, in Dr. Marcuse's opinion, if an American firm sells to or buys in Germany; orders being taken by mail, wire, traveling salesman and canvassers, it is not thereby "doing business" in the sense of the law. Apparently the running by the American firm of a place in Germany, where any business forming part of the home trade is done, brings it within the law.

At the same time, the appointment of an agent or representation by a commission merchant, does not necessarily constitute doing business.

Two typical cases are referred to. In the one a big importing house, which represents many foreign firms, in various trades is an independent business. In the other, the salaried representative of a single firm is to be considered as an employe who runs the foreign firm's establishment. While these two cases are in themselves perfectly clear, it will often be rather doubtful whether the office is that of a German commission merchant or of a foreign firm; for the reason that, as a rule, business men choose the most convenient form of representation, without worrying about the legal side of the question. So it is often very hard to decide whether the foreign firm or its representative is doing business.

The keeping of a large sample room does not constitute doing business. On the other hand a firm was considered as doing business in Germany, which sold its goods through traveling salesmen, which were forwarded from stock held in Berlin.

In conclusion, Dr. Marcuse remarks that there is one way of evading all the above difficulties, by forming an independent corporation, either a stock company or an association with limited liability; the latter form being more appropriate for the representation of foreign firms. Such association can be formed by two persons with a capital of $5,000, and may have for its object the representation of a certain foreign firm. The income tax on such associations is higher than that levied on individuals, but as it will never have to show a profit, it will be consequently practically exempt from that tax, with which the business tax is small in comparison.

The authorities have attempted to claim that such associations should be disregarded, as being in bad faith. The courts have, however, decided that a corporation, duly organized under German laws, cannot be simply overruled by tax officers, for the reason that they were formed to evade taxes.

MR. YAMADA GOES TO THE "GOMU SEKAI."

OUR enterprising correspondent in Japan, Mr. S. Yamada, who has been associated for some time with the Japanese rubber paper called the "Gomu Shimpo Sha," has left that publication to take the position of editor and manager of the Tokyo and foreign office of the "Gomu Sekai," a monthly publication printed in Osaka, which is an organ of the rubber and celluloid trades. Mr. Yamada is a very painstaking and reliable newspaper man and is widely familiar with the rubber trade of Japan, as well as with the trade generally all over the world. He goes to his new position with a fine equipment for his work.

RUBBER TRADE IN JAPAN.

By Our Regular Correspondent.

JAPANESE RUBBER PLANTING IN MALAY PENINSULA.

ACCORDING to the details which appeared in the April, 1912, issue, Japanese investors to the number of 77 had, up to the previous August, acquired in Malaya about 83,750 acres, of which the area of 15,800 acres had been planted. More detailed particulars, since available, show the distribution to be as follows:

STATES.	Number of plantations.	Acreage rented.	Acreage cultivated
Johore	44	77,730	12,785
Negri Sembilan	15	2,845	1,768
Selangor	21	1,420	880
Perak	6	1,055	480
Kedah	1	450	220
(Singapore)	2	250	120
Revised particulars to end of 1911..	89	83,750	16,453

The State of Johore thus contains 50 per cent. of the number of Japanese plantations in the Malay Peninsula, as well as 93 per cent. of their total acreage and 75 per cent. of the cultivated area of its plantations. Eighty per cent. of the whole Johore acreage and 60 per cent. of the cultivated portion belongs to eight plantations. Johore is consequently the most important Malay State for Japanese rubber cultivation.

LATEST EXTENSIONS.

In October, 1912, Mr. Chujun Osada, who had owned 500 acres along the river Johore (not cultivated), established the Malay Planting Co. with $150,000 capital for cultivating 1,000 acres.

The Okura Rubber Co. has been lately established with $50,000 capital to cultivate 1,300 acres along the Central Railway of Johore, in part of which the late Mr. Okura had been interested.

RUBBER PLANTING COMPANIES IN CHINA.

During the rubber boom of 1909-1910 no less than thirty-nine companies were started in China for the purpose of acquiring rights to rubber lands selling them, rather than with the idea of planting trees. When the reaction came these companies were seriously affected, some of them only retaining their name, without any assets.

Six of the companies, however, paid a dividend to the stockholders for a time. These were: (1) Alma Estates; capital, $350,000; paid 3 per cent. in 1910, when they made $18,000, but lost $19,000 in 1911. (2) Chaupedack Rubber and Gambier Co.; capital, $190,000; paid 10 per cent. in 1910, when they made $12,000. In 1911 they made only $5,500 and paid no dividend. (3) Anglo-Java Estate; capital, $1,250,000; paid 7½ per cent. in 1910, when they made $8,500; paying 4 per cent. when profits were reduced in the year 1911. (4) Denkaranturian; capital, $150,000; profits in 1911, $2,000, and $24,000 in 1912, when 12 per cent. was paid. (5) Padang Rubber; capital, $150,000; made $10,000 in 1911, but paid no dividend; made $23,000 in 1912, when paid 6 per cent. (6) Senaivan Rubber Estates; capital, $250,000. In 1911 paid 38 per cent., when they made $75,000.

Most of the investors are Englishmen and the rules of the companies are in accordance with British law.

BRITISH CAPITAL IN SUMATRA.

According to a British Consular Report on the trade of Sumatra, the cultivation of rubber is one of the most important industries of that island, representing about $40,000,000, five-eighths of which is estimated to be British capital, divided among 50 companies. Some 30 companies are said to be producing, but the majority only on a small scale. Returns are quoted which showed that at the end of 1911 there were 130,000 acres planted in *Hevea Brasiliensis*.

Some Rubber Planting Notes.

FEDERATED MALAY STATES RUBBER CO., LIMITED.

ACCORDING to the annual report prepared for presentation to the shareholders at the annual meeting of October 30, at Antwerp, the planted area increased during the year from May 31, 1911, to May 31, 1912, from 3,824 acres to 4,594½ acres, total area having increased in the same time from 7,264 acres to 8,217½ acres.

The total yield of rubber for the year was 720,853 pounds, slightly over the estimate of 711,000 pounds, the average yield per tree having increased from 2 pounds to 2.49 pounds, and per acre from 211 pounds to 227 pounds. The cost of production, including general expenses, equaled 1*s.* 9½*d.* per pound, against 2*s.* 6½*d.* for the previous year, the increased number of trees tapped and the higher yield per tapped tree causing this reduction. For the year 1912-1913 the estimate is 1,000,000 pounds of dry rubber.

SAPUMALKANDE RUBBER COMPANY, LIMITED.

THE total harvested for the first three quarters of 1912 was 149,916 pounds (against about 90,000 for corresponding period of 1911), of which 76,600 pounds were sold at an average gross price of 4*s.* 8*d.*, forward contracts for 13,440 pounds No. 1 having been made at an average gross price of 4*s.* 8½*d.* Forward contracts for 1913 represent 36,000 pounds at a gross average of 4*s.* 8.33*d.*

SEAPORT (SELANGOR) RUBBER ESTATE, FEDERATED MALAY STATES.

Having produced in the year ended June 30, 1911, a yield of 17,717 pounds, the figures for the year ended June 30, 1912, of 130,291 pounds show more than a seven-fold increase in the production of the Seaport Rubber Estate.

The cost of production was 2s. O.38d. per pound, or, including all London charges, 2s. 6.54d. per pound.

MALAYAN GOVERNMENT WARNING INVESTORS.

The government of the Federated Malay States has issued a warning against participation in certain speculative companies. During the boom of 1910 they started acquiring rubber estates, but are now devoting their energies to cocoa nuts and copra. In the cable which transmitted this warning it was likewise stated that several retired English officials were mixed up with these companies, the financial status of which is not thereby strengthened.

MALAYAN COMPANIES' RETURNS.

The returns of six leading Malayan companies for the eight months ended August 31 compare very favorably with those for the corresponding period of last year. Exact figures are:

	Eight months to August 31	
	1911	1912
	pounds	pounds
Anglo Malay	461,966	516,760
Pataling	196,230	281,118
London Asiatic	188,294	406,309
Golden Hope	62,488	85,760
Selaba	115,104	196,676
Bikam	54,906	97,630
Total	1,078,988	1,584,253

MR. WICKHAM'S IMPROVED SMOKING APPARATUS.

In the October issue attention was called to the fact that the new smoking apparatus designed by Mr. H. A. Wickham and made by David Bridge & Co. was to be shortly demonstrated at the works of the Colombo Commercial Co. According to the "Colombo Observer," the demonstration has now taken place, with the result that a block has been produced resembling fine hard Pará in appearance, but on being cut was seen to be finely laminated, each flake of rubber having been well smoked. The block produced was about nine inches or a foot square, and at the time of writing was not quite hard.

This condition would be attained in about a fortnight, and then its appearance would closely approximate that of hard Pará.

The process is interesting. Latex is poured into a revolving drum, smoked and pressed. In the Amazon the smoking is done with fuel obtained from the palms. The palms, however, are different from those growing in Ceylon, but Mr. Wickham thinks that the local palm tree will be quite suitable for his process. The machine at present is foot powered, but it is adaptable for belt drive. There is a possibility of a further demonstration in Colombo. Those who have seen both the rubber and the process are convinced that it is a good thing, and may have an important bearing on the plantation industry.

PROSPECTS OF SOUTHERN INDIA.

The report of Harrisons & Crosfield (Limited), London, in speaking of the acquisition of the business of Cameron & Co., of Quilon, Southern India, adds:

"We decided to extend the interests the company had in Southern India, which country, we feel, has a great future before it in connection with the tea and rubber industries, having many natural and economic advantages for the production of both."

As this company acts as secretary for various large rubber companies, it is in touch with the situation generally.

FEDERATED MALAY STATES RUBBER EXPORTS.

	1910. lbs.	1911. lbs.	1912. lbs.
January	768,743	1,329,170	2,730,576
February	728,458	1,490,849	2,715,767
March	899,383	1,916,219	3,089,583
April	1,123,097	1,235,917	2,285,390
May	877,435	1,147,488	2,255,034
June	879,675	1,229,754	2,305,915
July	971,469	1,581,993	2,695,861
August	981,022	1,651,845	3,655,535
September	1,110,476	1,677,062	2,968,121
October	1,484,847	2,182,857	3,210,831
Total	9,824,605	15,443,154	27,912,613

By the above returns it will be seen that this year's rubber exports from the Federated Malay States are so far nearly double those for the corresponding period of last year, and almost three times those for the first ten months of 1910.

RUBBER EXPORTS FROM PANAMA.

According to the report of the German commercial expert for the West Coast of South America, the rubber exports of Panama are still inconsiderable; planting being only as yet in its commencement. Good prospects, however, exist for the future. *Castilloa elastica* is found in nearly all parts of the interior, and a little rubber has been exported for many years. In former years the Indians used to cut down the trees for the sake of the latex; but more recently they have been re-planting. The plantations are, however, still too young to produce a yield. The rubber exported as "Panama Rubber" is quoted in Germany at the same price as Peru rubber.

BRAZILIAN VIEW OF NEW YORK PRIZE AWARD.

The "Revista" of the Amazonas Commercial Association of Manáos, in commenting upon the cable advice of the award to the State of Amazonas of THE INDIA RUBBER WORLD trophy, remarks:

"It is beyond doubt that our rubber forms a distinct type, superior in resistance and elasticity to the rubbers obtained by the chemical coagulation of the latex, seeing that in competition with the latter it has obtained the special prize in three expositions."

A CHANCE TO START RUBBER IN BURMA.

A letter has been received in the office of THE INDIA RUBBER WORLD from an Englishman resident in Burma, who believes that there is a very fine prospect for the profitable planting of rubber in that country. He writes as follows: "I am very much interested in rubber, being a practical planter of seven years' experience in Sumatra, Malay States and Burma, and from what I have seen this country compares very favorably with the others, and I am certain there is a great future for rubber-growing in Burma. The principal reasons in support of the above statements are as follows:

"1. Large tracts of suitable rubber-growing land.

"2. Soil and climatic conditions excellent.

"3. Plenty of labor, and cheaper labor than in other countries, daily labor varying from 16 to 25 American cents per day, principally the former.

"4. Estates are very free from disease.

"5. Easy communications by road, rail or sea.

"6. Land is rent-free for eight years.

"And lastly, estates can be opened up, burnt, cleared and stumped, planted and brought into bearing easily for $150 American money, which compares very favorably with other countries."

He goes on to say that he believes there is a fine opportunity for American capitalists to invest money in a rubber plantation in Burma, and he would like very much to undertake the management of such a plantation, and refers to a number of people in the Middle East and in London who will vouch for his personal reliability.

PLANTATION AND WILD RUBBER—AS VIEWED BY A BELGIAN EXPERT.

In a review of the above question in the columns of the "Gummi-Zeitung," M. G. van den Kerckhove, of Brussels, refers to the opinion often heard that wild rubber is destined to be superseded by plantation rubber, but takes exception to that view of the case. Here is his opinion of the matter:

"Wild rubber will always retain its market, particularly the fine Pará of the Amazon, which will always remain the standard of elasticity for all the rubber manufacturers in the world. Fine Pará will not allow itself to be dethroned, and will always take the lead for elasticity, although many Ceylon and Malay descriptions may surpass it as to purity and dryness."

From the above it is deduced that the efforts of the planting companies should be directed towards a product as far as possible equal to fine Pará.

Attention is called to the fact that there is in plantation rubber a great diversity of quality, though from the same source (*Hevea*) and cultivated on the same soil. At a recent London auction, according to this writer, there were 11 or 12 well marked qualities of crepe ranging in price from 3s. 8d. to 4s. 8d., and five qualities of biscuits and sheets from 4s. 4½d. to 4s. 7¼d. Only block was fairly uniform in price and quality.

He continues:

"Is there any way of counteracting this diversity in quality, which affects the good reputation of this rubber? I must answer this in the affirmative. In my opinion, binding agreements should be made at one of the next rubber congresses, between the planting companies as to a uniformity in the form of their product, and about uniform coagulation of the latex."

In conclusion, it is added, that while such an arrangement would be extremely difficult, yet if a majority of the rubber producing companies were in favor of the measure, the others must necessarily follow. The consequent uniformity would lead to greater confidence on the part of manufacturers and to a higher valuation of the product; to the advantage of plantation industry; particularly in the Malay States, Ceylon and the Dutch Indies.

SUMATRA'S RUBBER OUTLOOK.

Since the United States Rubber Co. invested in an 80,000-acre plantation in Sumatra and has started to plant this to rubber—having, as a matter of fact, nearly one-third of this great acreage already set out in rubber trees—a great deal of attention has been turned on the part of rubber planters everywhere to this particular island. Baron Autenried, the manager of one of the large English plantations in Sumatra, who recently passed through New York on a trip around the world, was very enthusiastic over the Sumatra rubber outlook. He expressed himself as follows:

"Of course, everybody out there seems to be going in more or less for rubber. The first trees were planted in 1899, and then in 1903 the great estates, many of which had been devoted to coffee raising, began to plant rubber. A little later came the rubber boom, when a great deal of English capital came in, and much new land was opened. Up to 1911 there were 126,000 acres on the east coast in rubber. Now about $25,000,000 of English capital, $3,500,000 Dutch, $2,000,000 of French, $400,000 of German, and $4,000,000 of American money are invested in the industry.

"Experiments have shown that the eastern district of Sumatra is more favorably adapted to rubber cultivation than Ceylon, and is equally as good for that purpose as the Federated Malay States. Besides, labor conditions are much better than in most other countries. We import coolies from Java, which is overpopulated, and the workmen are very satisfactory. It takes a rubber tree four years to bear in Sumatra. We have better weather and a more equable temperature than they have in Singapore.

"As a rubber producing country, Sumatra is only beginning. So far only some twenty estates are actually producing, for most of the planting was done during the boom. The exportation of rubber in 1911 was 1,400,000 pounds. In 1914 this will be doubled."

AN ENGLISH OPINION OF UNITED STATES RUBBER CO.'S PLANTATION.

IN reviewing the above subject the "Financier" of London remarks that it will be about two or three years before the United States Rubber Co. can reasonably expect to get any quantity of rubber from its 80,000-acre plantation in Sumatra. But, it is added, after the trees come into bearing they should rapidly increase their production, until a yearly total of 15,000,000 to 20,000,000 pounds of rubber should be available.

Whether production will ever reach a point where the company is not obliged to buy any rubber in the open market, it is considered too early to predict, but it is remarked that in the best opinion this idea will be very closely realized.

Until the trees come into bearing the capital which will have been poured into this Sumatra investment, will, it is calculated, have reached $6,000,000, this money in the meantime earning nothing. As to prospective value of the property, the journal says in conclusion:

"This rubber plantation is a valuable equity with fascinating possibilities. Its income-producing ability has not begun to be discounted in the price of the shares. As time goes on, it must inevitably receive an increasing degree of speculative attention.

AMERICAN SYNTHETIC RUBBER PATENTS.

IN view of the attention now being paid to the question of synthetic rubber, interest attaches to a series of four American patents recently issued to Lucas Petron Kyriakides and Richard Blair Earle, of Boston, Massachusetts. The applications had been made on November 11, 1911, and the patents were granted on July 23, 1912.

The claims of the four patents are as follows:

PROCESS OF PRODUCING PIPERYLENE.

1. The process for producing piperylene, which consists in passing the vapors of amylene oxid over heated dehydrating catalytics at temperatures from 400°-500° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

2. The process for producing piperylene which consists in passing the vapors of amylene oxid over heated aluminum silicate at temperatures from 400°-500° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

PROCESS OF PRODUCING ISOPRENE.

1. The process for producing isoprene, which consists in passing the vapors of the valeraldehyde over dehydrating catalytics at temperatures from 400° to 600° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

2. The process for producing isoprene, which consists in passing the vapors of the valeraldehyde over aluminum silicate at temperatures from 400° to 600° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

PROCESS OF PRODUCING ERYTHRENE.

1. The process for producing erythrene, which consists in passing the vapors of normal butyraldehyde over heated dehydrating catalytics at temperatures ranging from 500°-600° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

2. The process for producing erythrene, which consists in passing the vapors of normal butyraldehyde over heated aluminum silicate at temperatures from 500°-600° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

PROCESS FOR PRODUCING $\beta\ \gamma$ DIMETHYLBUTADIENE.

1. The process for producing $\beta\ \gamma$ dimethylbutadiene, which consists in passing the vapors of the hexylene oxid over heated dehydrating catalytics at temperatures from 400°-500° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

2. The process for producing $\beta\ \gamma$ dimethylbutadiene, which consists in passing the vapors of the hexylene oxid over heated aluminum silicate at temperatures from 400°-500° C., *in vacuo*, at pressures less than 60 millimeters of mercury.

SYNTHETIC RUBBER FIGURES.

IN the "Ceylon Observer," D. U. Weigel, of Kollupitiya, questions the figures of yield put forward in the prospectus of the synthetic rubber promoters. These yields, it is recalled, were stated as follows:

1. Starch from potatoes .....60 per cent.
2. Fusel oil from starch.....43 per cent.
3. Isoprene and rubber from fusel oil..50 per cent.

The first figure he characterizes as "utter nonsense" the maximum yield being 24 per cent., and the average 17 per cent.; adding that there had apparently been some confusion with the 55 per cent. yield from maize.

As to the alleged 43 per cent. of fusel oil from starch, Mr. Weigel remarks that the bacteria which influence butylic fermentation are known, but he has never found any authority to attribute to any of them the power of activity up to a 43 per cent. yield.

This discussion of the question of yield from a scientific point of view, at such an important point as Ceylon, indicates the widespread interest which the subject of synthetic rubber has aroused throughout the world.

FAREWELL DINNER TO MR. MANDERS.

AMONG the many farewell luncheons and dinners tendered A. Staines Manders prior to his departure to Europe, one of the most notable was the dinner at the Lotos Club on the evening of November 12. There were present only men identified with the rubber trade. Informal speeches were made by Arthur W. Stedman, J. O. Stokes and George B. Hodgman. In behalf of friends of Mr. Manders in the rubber trade, H. C. Pearson presented a beautiful loving cup. Mr. Manders, in accepting it, paid a high tribute to American enterprise as evidenced by the prosperous rubber industry.

The cut below shows the cup on an ebony standard. The cup alone stood about 12 inches high and was etched on its face with a decorative design of rubber leaves framing the following inscription:

Presented to
A. STAINES MANDERS
Organizing Manager
and
MISS D. FULTON
Secretary
Of the
Third International Rubber
And Allied Trades Exposition
New York, 1912
By Their Friends
Of the
American Rubber Trade.

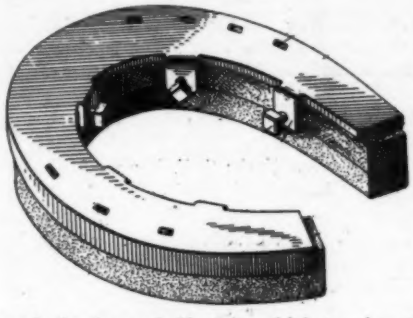
Mr. Manders was greatly pleased with this token of regard from his American friends, and though he received a number

of other souvenirs of his six months' stay in the United States, he probably received none that he will treasure more highly.

New Rubber Goods in the Market.

A NEW RUBBER HORSESHOE.

EVERYBODY ought to be glad when things come the horse's way. Here is a new horseshoe that should do a great deal to relieve the horse's burden. It really puts him on a quick-detachable tire footing. The accompanying cut will give some idea of this new shoe. It consists of an iron shoe that is nailed on the horse's hoof like any other shoe. Around the outer edge of this shoe there is a flange and on the inner edge five lugs, each with a threaded bolt with a square head. This flange and these lugs form a channel, into which is fitted a solid rubber tread, the lower half of it, which touches the ground, being resilient rubber, the upper half, which fits into the iron shoe, consisting of rubber and canvas. A layer of stout fabric covers this upper half of the tread, reaching down to the lower or rubber half. This canvas cover makes it possible to screw the bolts in so as to hold the tread securely without damaging that part of the tread that comes in contact with the bolts.



This shoe gives the horse an all-rubber tread, and at the same time leaves the frog of the foot entirely open. When the tread is worn out another can be inserted in a couple of minutes by simply loosening and then tightening the bolts, and the iron part of the shoe gets no wear whatever and consequently stays permanently on the horse's foot without the necessity of replacing. This new horseshoe was invented and has been patented by G. E. McKinnon, Little Falls, New Jersey.

THE TWIN NURSING BOTTLE.

The youngster who has not yet arrived at the stage of life where he is interested in table d'hotes, and must still subsist solely on milk, has had a good many devices prepared for his convenience and health. Here is one of the very latest. It is a nursing bottle, very simple in construction, consisting of one tube and two rubber caps—one at each end.

When the cap, or "the breast," as the manufacturers call it, at one end of the tube is turned inward, it forms a base for the nursing bottle. This base may contain a puncture in the nipple, or not, as preferred. When the nipple is perforated, air is admitted to the bottle by way of the base, which makes nursing easier for the child. This device is easy to clean. [Hygeia Nursing Bottle Co., Buffalo, New York.]

THE LIBBY ANTI-BURSTING DEVICE FOR TIRES.

AN objectionable feature of pneumatic tires on automobile wheels has been that they would frequently burst or blow out, on account of excess pressure within the tire, caused by the expansion of air confined therein, resulting from friction or changes in temperature, or from sudden contact of the tire with obstacles in the road. This trouble is of comparatively frequent occurrence and has not only proved a source of expense, but has led to many serious and fatal accidents. Moreover, the constant variations of pressure shorten the life of the tire.

An invention of John K. Libby, of Malden, Massachusetts, for which a United States patent (No. 1,035,207) has been issued, consists of a vehicle wheel having a pneumatic tire, whose interior communicates with an elastic relief chamber. When the pressure of the air in the tire increases, it is exhausted into the relief chamber, thereby preventing an excessive or injurious pressure in the tire. When the pressure in the tire falls, air will be exhausted from the relief chamber into the tire, thus preventing an excessive reduction of pressure in the latter. A normal safe working pressure, according to the inventor, will thus be maintained, notwithstanding variations of temperature within the tire, however caused.

The device is a mechanical one, composed of metal and rubber and mounted on the hub of the wheel. It is already patented in the United States, and patents have been applied for in Great Britain, France, Germany, Italy and Canada.

THE RUBBER CUSHION HAIR BRUSH.

Rubber-cushion hair brushes are not so particularly new; the Pearson hair brush, for instance, first appeared on the London market about twenty-eight years ago. But it is an interesting article, in which rubber plays a considerable part, and it has proved extremely popular. As the accompanying cut shows, the bristles are imbedded in a cushion of rubber. This enables the brush to combine the durability of stiff bristles, together with the yielding effect of the rubber cushion, which, in reality, is an air-cushion; accordingly the brush has a certain pneumatic resiliency. These Pearson rubber-cushion brushes are now made in a great variety. They are made in three sizes: in black and white, cherry, rose, satin and ebony woods. The American agents are Alfred H. Smith Co., 35 West Thirty-third street, New York City.

PEARSON'S RUBBER-CUSHION "IDEAL" HAIR BRUSH.

A LIGHT SANITARY, INEXPENSIVE FOOT ARCH.

An Albany physician—or to be more explicit—Dr. John J. Collins, 69 Ten Broeck street, Albany, New York, has invented a new sort of foot arch, made from reinforced hard rubber. It is thoroughly ventilated, which makes it sanitary and cool. It is impervious to moisture and is extremely light. Moreover, it can be made flexible by the application of a certain degree of heat, which makes it possible to adjust it to any normal or abnormal condition of the foot. Another point in its favor is that it can be manufactured very inexpensively, so that it can be put on the market at an attractive price. The doctor, who has other affairs to attend to, has never put this arch on the market or advertised it, and he is willing to dispose of the patent (which has 14 years to run) and the molds at quite a reasonable figure. This arch has been examined by other physicians and highly commended by them. Here appears to be a chance for somebody to acquire a good foot arch on favorable terms.

THE BRAENDER AUTO TIRES.

The illustration below shows a tire made by the Braender Co., which has a somewhat peculiar tread. These tires are said to be made of exceedingly fine fabric and rubber, with particular

THE BRAENDER TREAD.

attention given to the tread, so that it is unusually durable. These tires range in size from 30 x 3 inches to 37 x 5½ inches. [The Braender Rubber & Tire Co., Rutherford, New Jersey.]

A FINE USE FOR OLD AIR-BRAKE HOSE.

To find a good use for a useless thing is to confer a benefaction on all mankind. That is practically what one of the Eastern railroads has done in converting worn-out air-brake hose into rubber mats on which to drop trunks. To be sure, old air-brake hose is not absolutely useless, for the rubber can be extracted from it, but if it can be converted into a satisfactory mat its value is much enhanced. The mats used by this particular railroad consist of about 24 pieces of old hose, cut a little less than 2 feet in length. These pieces are put side by side close together and fastened to four strips of wood that form a base and serve to keep the strips in place. This makes a mat nearly 2 feet wide by about 4½ feet long, and when trunks are pulled out of the cars or dumped off of trucks, instead of being smashed on stone or concrete flooring, they land on these resilient mats with very little harm. Probably some other sort of base made of rope or fibre would be even better than the wooden base, but the essential feature, of course, is the layer of rubber tubes that form the mat.

RUBBER COMPANIES AT THE AUTO. SHOWS.

THE automobile manufacturers will hold their annual shows in New York, Chicago and Boston as follows: In New York there will be two shows, one in the Madison Square Garden and the other in the Grand Central Palace. Both will continue two weeks, from January 11 to January 25. The Chicago show will continue two weeks, from February 1 to 15, and the Boston show will be held for one week, from March 5 to March 12.

The following tire and accessory manufacturers will take part in the two weeks' show at the Madison Square Garden:

Ajax-Grieb Rubber Co., New York; S. F. Bowser & Co., Fort Wayne, Indiana; Consolidated Rubber Tire Co., New York; Continental Caoutchouc Co., New York; The Diamond Rubber Co., Akron, Ohio; Joseph Dixon Crucible Co., Jersey City, New Jersey; Empire Tire Co., Trenton, New Jersey; Firestone Tire & Rubber Co., Akron, Ohio; The Fisk Rubber Co., Chicopee Falls, Massachusetts; G. & J. Tire Co., Indianapolis, Indiana; The B. F. Goodrich Co., Akron, Ohio; The Goodyear Tire and Rubber Co., Akron, Ohio; The Hartford Rubber Works Co., Hartford, Connecticut; Link-Belt Co., Philadelphia, Pennsylvania; Michelin Tire Co., Milltown, New Jersey; Morgan & Wright, Detroit, Michigan; The Motz Tire and Rubber Co., Akron, Ohio; Pennsylvania Rubber Co., Jeannette, Pennsylvania; The Republic Rubber Co., Youngstown, Ohio; A. Schrader's Son, Inc., New York; Swinehart Tire and Rubber Co., Akron, Ohio; The United Rim Co., Akron, Ohio.

The following tire manufacturers will exhibit in Madison Square Garden only for the first week:

The Batavia Rubber Co., Batavia, New York; Endurance Tire and Rubber Co., New York; New Jersey Car Spring and Rubber Co., Jersey City, New Jersey; The Pantasote Co., New York; The Seamless Rubber Co., New Haven, Connecticut; Voorhees Rubber Manufacturing Co., Jersey City; Walpole Rubber Co., Boston; Marathon Tire and Rubber Co., Cuyahoga Falls, Ohio.

A. Schrader's Son, Inc., New York, will exhibit at the Grand Central Palace for two weeks. The Continental Rubber Works Co., Erie, Pennsylvania, will exhibit at the Grand Central Palace for the first week only.

The following tire manufacturers will exhibit at the Chicago show for the entire two weeks:

Ajax-Grieb Rubber Co., New York; S. F. Bowser & Co., Fort Wayne, Indiana; Consolidated Rubber Tire Co., New York; Continental Caoutchouc Co., New York; The Diamond Rubber Co., Akron, Ohio; Joseph Dixon Crucible Co., Jersey City, New Jersey; Empire Tire Co., Trenton, New Jersey; Firestone Tire and Rubber Co., Akron, Ohio; The Fisk Rubber Co., Chicopee Falls, Massachusetts; G. & J. Tire Co., Indianapolis, Indiana; The B. F. Goodrich Co., Akron, Ohio; The Goodyear Tire and Rubber Co., Akron, Ohio; The Hartford Rubber Works Co., Hartford, Connecticut; Link-Belt Co., Philadelphia, Pennsylvania; Morgan & Wright, Detroit, Michigan; The Motz Tire and Rubber Co., Akron, Ohio; Pennsylvania Rubber Co., Jeannette, Pennsylvania; The Republic Rubber Co., Youngstown, Ohio; Swinehart Tire and Rubber Co., Akron, Ohio; The United Rim Co., Akron, Ohio.

The following manufacturers will exhibit at the Chicago show for one week only:

The Batavia Rubber Co., Batavia, New York; Double Fabric Tire Co., Auburn, New York; Endurance Tire and Rubber Co., New York; Federal Rubber Manufacturing Co., Cudahy, Wisconsin; Leather Tire Goods Co., Niagara Falls, New York; Lee Tire and Rubber Co., Conshohocken, Pennsylvania; Michelin Tire Co., Milltown, New Jersey; New Jersey Car Spring and Rubber Co., Jersey City; The Pantasote Co., New York; Racine Rubber Co., Racine, Wisconsin; The Seamless Rubber Co., New Haven, Connecticut; C. A. Shaler Co., Waupun, Wisconsin; Universal Tire Protector Co., Angola, Indiana; Voorhees Rubber Manufacturing Co., Jersey City.

The following tire manufacturers will exhibit at the Boston show: Ajax-Grieb Rubber Co., New York; S. F. Bowser & Co., Fort Wayne, Indiana; Consolidated Rubber Tire Co., New York; Continental Caoutchouc Co., New York; The Diamond Rubber Co., Akron, Ohio; Firestone Tire and Rubber Co., Akron, Ohio; The Fisk Rubber Co., Chicopee Falls, Massachusetts; G. & J. Tire Co., Indianapolis, Indiana; The B. F. Goodrich Co., Akron, Ohio; Goodyear Tire and Rubber Co., Akron; Hartford Rubber Works Co., Hartford, Connecticut; Morgan & Wright, Detroit, Michigan; The Motz Tire and Rubber Co., Akron; Pennsylvania Rubber Co., Jeannette, Pennsylvania; Swinehart Tire and Rubber Co., Akron; The United Rim Co., Akron; Voorhees Rubber Manufacturing Co., Jersey City; The Batavia Rubber Co., Batavia, New York; Double Fabric Tire Co., Auburn, Indiana; Endurance Tire and Rubber Co., New York; Empire Tire Co., Trenton, New Jersey; Federal Rubber Manufacturing Co., Cudahy, Wisconsin; Leather Tire Goods Co., Niagara Falls, New York; Lee Tire and Rubber Co., Conshohocken, Pennsylvania; Michelin Tire Co., Milltown, New Jersey; The Pantasote Co., New York; The Republic Rubber Co., Youngstown, Ohio; The Seamless Rubber Co., New Haven, Connecticut; C. A. Shaler Co., Waupun, Wisconsin.

News of the American Rubber Trade.

PENNSYLVANIA RUBBER COMPANY.

THE annual stockholders' meeting of the Pennsylvania Rubber Co. was held at the main office of the company at Jeannette, Pennsylvania, on November 8. The office of chairman of the board of directors was created, to which Mr. Herbert DuPuy was elected, having retired from the presidency in favor of H. Wilfred DuPuy, who was elected to that office in addition to that of treasurer. The other officers and directors were re-elected as follows: Charles M. DuPuy, vice-president; George W. Shiveley, secretary; Seneca G. Lewis, general manager; Charles G. Morrill, assistant treasurer. Mr. Lewis announced that business had increased 75 per cent. over the previous year, and that contracts on hand would tax the utmost capacity of the plant during 1913.

THE HARTFORD'S OUTPUT OF BICYCLE TIRES.

A GREAT many people have the idea that the bicycle has lapsed into innocuous desuetude—to use a term quite popular twenty years ago. To be sure, one doesn't bump into a bicycle every time he goes out now, as he did some years ago, but evidently the bicycle is still affected by a very considerable part of the population—judging from the number of tires made for this comparatively inexpensive but convenient vehicle. Take, for instance, the output of one factory alone. The Hartford Rubber Works' factory manager says that two years ago they manufactured 230,000 bicycle tires; last year the number increased to 450,000; for the year 1912 he estimates 650,000, and for 1913 100,000 more, which would seem to indicate that bicycles were not only holding their own, but really growing in popularity.

THE AKRON MOLD AND MACHINE CO.

One of the best equipped foundries in Akron is that of the Akron Mold and Machine Co. This company specializes in rubber mill works and has recently moved into its present quarters, built especially for the purpose to which it is devoted, and which was made necessary by the remarkable increase in the company's business during the past three years. A unique feature of the new building is a well appointed toilet and locker room for the use of the 60 men employed. In addition to its regular line the company is making the famous Y. and S. core. Stanley Harris, the president, is one of the most capable machinists in the trade, and to him belongs the credit of the development of the Akron Mold and Machine Co. to its present enviable position.

The Gordon Rubber Co., Canton, Ohio, has become an important factor in drug sundry and automobile tire lines. The Gordon product is of recognized standard, and the company has expanded continuously since the inception of the present management. The superintendent, Neil Crawford, formerly of the Hewitt Rubber Co., is producing excellent results in his present position.

The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana, estimates that its present automobile tire production will be multiplied by three in 1913.

A surgeon's glove with a patent knuckle, which is claimed to obviate tension at finger ends is a recent production of the Hadfield Rubber Co., Akron, Ohio. It is said to be favorably received by surgeons.

A map of Akron, "the city of opportunity," surrounded by cuts of several of the prominent rubber mills, has recently been issued by a local printing concern.

A hard rubber corset stay with re-enforced ends is a recent patent of the Summit Rubber Co., Barberton, Ohio.—Another new Summit offering is a dipped narrow-necked water bottle.

NET EARNINGS OF NEARLY 14 PER CENT.

The annual report of the Ajax-Grieb Rubber Co. for the year ending August 31 last has recently been published, and shows a net business of $2,936,923.19, with net earnings of $408,434.53, or almost 14 per cent. The company's statement is as follows:

ASSETS.

Cash in banks and offices		$110,307.48
Bills receivable		137,389.42
Accounts receivable		291,313.65
Merchandise and materials		432,672.81
Mortgages, etc. (owned)		12,912.61
Real estate, buildings, machinery and equipments	$322,296.72	
Less depreciation charges	57,844.01	
		264,452.71
Patents		10,000.00
Total assets		$1,259,048.68
Net earnings for year	$408,434.53	
Fire insurance carried	890,000.00	

LIABILITIES.

Notes payable		None
Accounts payable (not due)		$155,161.77
Capital stock:		
Preferred 7 per cent.	$285,000.00	
Common	450,000.00	
		735,000.00
Surplus August 31, 1912		368,886.91
Total liabilities		$1,259,048.68

MESSRS. PATTERSON & APPLETON START A TIRE COMPANY.

John S. Patterson, who has been factory superintendent of the Revere Rubber Co. for the past 10 years, and Capt. Francis H. Appleton, of F. H. Appleton & Son, Inc., the well-known rubber reclaimers of Boston, have organized a stock company, under the laws of Massachusetts, under the name of the Patterson Rubber Co., with a capital stock of $500,000, for the manufacture of automobile tires. Mr. Patterson will be president of the company and have general charge. His son, who has also been with the Revere company for some years, will be manager of the new factory, and have as his assistants a number of men who have been his former associates, among them Walter F. McDonald, who will be assistant factory manager; Frank Chamberlain, who will be factory superintendent, and Charles H. O'Neil, who will be mechanical engineer.

The work of building the factory has already begun. It will be located in Lowell, Massachusetts.

A NEW TIRE CO. IN EAST PALESTINE.

A new tire company has just been started in East Palestine, Ohio, under the name of the East Palestine Rubber Co., incorporated under the laws of Ohio. The president is the well-known rubber chemist, Wilmer Dunbar; the vice-president is A. S. Mauk, and the secretary and treasurer, Abram Hartley. The company is capitalized at $50,000. It has started on its factory, and is putting up a two-story building 50 x 110 feet, with a power house 35 x 50 feet. It expects to be manufacturing tires by the 1st of January.

The land was given the company free of tax by the town, and the townspeople have also subscribed a considerable bonus.

THE UNITED STATES RUBBER CO.

The rapid rise in the price of the common stock of the United States Rubber Co. during the latter part of November, which in a week's time carried it up some 10 points, gave rise to a great deal of conjecture as to its cause. Quite a good many of the financial writers said that this stock was to be placed on a 5 per cent. dividend basis, which accounted for its activity in the market. Inquiry at the office of the United States Rubber Co., however, brings the information that at the present time no such dividend increase is being considered. The report that the company's gross business shows an increase for the 10 months ending October 31 of 30 per cent. over the same period for last year, is confirmed at the company's office. This is a very substantial increase, and in itself would be sufficient to explain a marked rise in the price of the common stock.

NEW INCORPORATIONS.

American Kushion Kore Tire Co., Inc., November 12, 1912; under the laws of New York; authorized capital, $10,000. Incorporators: Charles H. Taylor, Christopher M. Baldy and K. E. Wilhelm—all of 558 Ellicott square, Buffalo, New York. Location of principal office, Buffalo, New York.

American-Mexican Rubber and Coffee Corporation, November 12, 1912; under the laws of New York; authorized capital, $2,000,000. Incorporators: William C. Douglas, 409 Eddy street; Arthur N. Gibb, 106 Cayuga Heights road, and Isaac K. Bernstein, 433 North Geneva street—all of Ithaca, New York. Location of principal office, Ithaca, New York.

Auto Tire Repair and Supply Co., November 4, 1912; under the laws of New Jersey; authorized capital, $100,000. Incorporators: Joseph Michel, 236 Salem street, Gloucester City, New Jersey; Thomas F. Golden, 2729 North Twentieth street, and Thomas J. Manning, 2229 North Fifteenth street—both of Philadelphia, Pennsylvania. To manufacture and deal in automobiles, cars, carriages, wagons, trucks and vehicles of all kinds.

The Carbone Co., Inc., October 28, 1912; under the laws of New York; authorized capital, $200,000. Incorporators: W. E. Greene, 100 Reade street, New York; G. C. Leonard, 472 Broadway, and W. G. Van Loon, 100 State street—both of Albany, New York. Location of principal office, Albany, New York. To deal in all kinds of rubber tires, etc.

The Goodyear Tire and Rubber Co., of South America, October 14, 1912; under the laws of Maine; authorized capital, $3,000,000. Incorporators: Joseph Williamson, Augusta; E. M. Leavitt, Winthrop, and E. M. Hussy, Augusta—all of Maine. To manufacture articles from rubber and refine crude rubber and to do all things incidental thereto.

Ithaca Boot Shop, September 17, 1912; under the laws of New Jersey; authorized capital, $25,000. Incorporators: James B. Banister, John W. and George M. Denny—all of Newark, New Jersey. Location of principal office, Ithaca, New York. To deal in boots, shoes, etc.

M. R. L. Resilient Tire Co., October 15, 1912; under the laws of Illinois; authorized capital, $25,000. Incorporators: Mitchell R. Labbee, Martin O. Lundholm and B. Wilson Moore. To manufacture and sell resilient non-puncturable tires, and deal in motor vehicles, and their parts and accessories.

Macandaruba Tire Filler Co., November 9, 1912; under the laws of Delaware; authorized capital, $1,500,000. Incorporators: H. Ralph Ewart, Clarence J. Jacobs, and Harry W. Davis—all of Wilmington, Delaware. To sell and place on the market a composition used as a filler for rubber tires known as the Macandaruba Elastic Filler.

The Owen Rubber Co., October 29, 1912; under the laws of Ohio; authorized capital, $10,000. Incorporators: Thomas J. Owen, F. E. Henry and Frank A. Owen. Location of principal office, Ashtabula, Ohio. To manufacture and deal in rubber goods, druggists' sundries, novelties, and merchandise.

St. Louis Tire & Rubber Co., November 15, 1912; under the laws of Missouri; authorized capital, $150,000. Incorporators: J. A. Swinehart, St. Louis, Missouri; Harry C. Barker, Webster Groves, Montana, and Alfred C. Einstein, St. Louis, Missouri. Location of principal office, University City, St. Louis County, Missouri. To manufacture, sell, import, and export and deal in vehicle and automobile tires, and to buy and sell as owners or on consignment, merchandise, etc., of which rubber is wholly or in part a component.

Triangle Tire Co., October 7, 1912; under the laws of Illinois; authorized capital, $5,000. Incorporators: Lawrence A. Cohen, Charles Aaron, and Floyd M. Stahl. Location of principal office, 59 East Garfield Boulevard, Chicago. To manufacture and repair automobile tires, accessories, automobiles, motorcycles, and operate a garage.

Tuxedo Tire Co., Inc., November 9, 1912; under the laws of New York; authorized capital, $8,000. Incorporators: Augusta Hormann, 429 East 157th street; Emilie and Adolph Walterberg—both of 558 Mott avenue, New York. Location of principal office, Bronx, New York.

Wetnot Manufacturing Co., Inc., November 18, 1912; under the laws of New York; authorized capital, $10,000. Incorporators: Charles Pechner, Henry L. and Samuel Speiling—all of 302 Broadway, New York. Location of principal office, New York. To deal in rubber goods.

TO SELL U. S. MOTOR CO. AT AUCTION.

A decree was signed on November 17 ordering the sale of the assets of the United States Motor Company and five subcompanies—the Alden Sampson Manufacturing Co., Brush Runabout Co., Columbia Motor Car Co., Dayton Motor Car Co. and the Maxwell Briscoe Motor Co.—on January 8 next, in Room 47, New York Postoffice Building, at 11 A. M. W. E. S. Strong and Roberts Walker may receive sealed bids at their office, Sixty-first street and Broadway, New York, up to 10 A. M. of January 8, which bids will be opened in the presence of Judge Hough in Room 47, Postoffice Building, at 11 A. M.

The property will be offered for sale in six parcels, in the order named above. The entire properties, as a whole, will also be offered in a single lot. After the sale of the properties bids will be received for shares of stock in various companies held by the United States Motor Company.

THE ATLANTIC RUBBER COMPANY.

Owing to the large increase in their business during the past year or two, The Atlantic Rubber Co. found their present factory inadequate, and have therefore sold it, and expect to build a new fireproof one next year. They have moved to another factory in Hyde Park, on River street, where they will remain until their new factory is fully equipped. In addition to selling their buildings and real estate, they sold a few of their heavy machines, which were expensive to move.

THE NORTH BRITISH PICTURES.

Mention was made in our November issue of the very interesting moving picture display contributed to the Rubber Exposition by the Malayan planters, but through an oversight no mention was made of the equally fine moving pictures, showing the process of manufacturing rubber, contributed by the North British Rubber Co. These pictures followed immediately after the plantation pictures and completed the story—the two series together giving the entire history of rubber from the time the seed is planted to the packing of the goods for the consumers' use. These pictures constituted one of the most valuable features of the exposition.

A PUNCH BOWL FOR MR. RODENBACH.

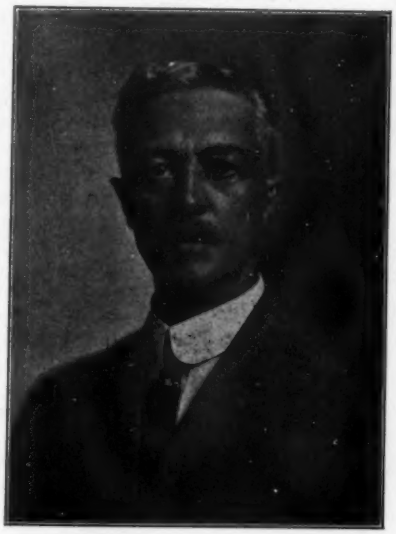
THE Rubber Reclaimers' Club held its annual meeting on November 7, at the Hotel Belmont, New York. All but three of the members were present. The officers of the preceding year were re-elected for the coming year; they are as follows:

President—F. H. Appleton.

Treasurer—R. W. Seabury.

Secretary—J. A. Norman.

The annual meetings of this club are always highly enjoyable occasions; this was particularly so by reason of the presentation of a Paul Revere punch bowl to Mr. W. T. Rodenbach, general manager of the United States Rubber Co.'s reclaiming plant, at Naugatuck, Conn. The presentation speech was made by President Appleton in the happy manner which is his habit. The following paragraph shows its general tenor: "It is surely a part of your nature," he said to Mr. Rodenbach, "to aid and



W. T. RODENBACH.

uplift mankind, apparently without distinction, and as far as I have been able to see, I have found you ready to help even a competitor whenever the opportunity has presented itself to you. You have ever been, and are, the father of this club, for without your aid, in my opinion the club would not have existed, but with your wise council all members have been benefited, so that today the club is in a flourishing condition, with a kindly feeling existing among all its members."

Mr. Rodenbach, like Mr. Woodrow Wilson—who was a professor before he undertook the reclaiming of politics—was a professor before he reclaimed rubber, and enjoys an exceptional facility in the expression of his ideas. Accordingly, while taken totally by surprise, he acquitted himself most creditably.

After the lunch had been adequately analyzed, the club proceeded to the discussion of the question of old tires, which, with not a few of the reclaimers, have now become the chief source of their old rubber supply.

BOSTON RECEIVES BIG RUBBER SHIPMENT.

ON the 11th of November a British freight steamer from the Far East arrived at Boston with a general cargo valued at more than $2,000,000, which is said to be the most valuable cargo of merchandise brought into that port in recent years. Among the interesting items that constituted the cargo was a consignment of 3,000 large cases of rubber.

PERSONAL MENTIONS.

According to an interview which a reporter secured with the American Consul at Para, Mr. George H. Pickerell, Commodore E. C. Benedict, one of the directors of the United States Rubber Co., has secured a rubber plantation not far from the city of Pará and has already planted 50,000 trees.

Mr. Lester Leland, vice-president of the United States Rubber Co., has been made a director of the Second National Bank of Boston.

Mr. Frank M. Hale, who has been in the service of the Woonsocket Rubber Co., as chemist, for the past three years, has given up that position to accept a similar one with the Whitall-Tatum Co., of New York. He will be located at their factory at Keyport, New Jersey.

Mr. W. T. Walker, formerly with the Oldsmobile and Matheson companies and other automobile concerns, has been appointed New England branch manager of the Kelly-Springfield Tire Co., with headquarters in Boston.

A. E. Williams, formerly manager of the advertising department of the Swinehart Tire and Rubber Co., Akron, Ohio, recently resigned to accept a position as district sales manager of the Stevens Motor Car Company of Chicago, Illinois.

Among the many visitors to Akron rubber mills during November was R. J. Caldwell, of R. J. Caldwell Co., of 374 Broadway, New York. Mr. Caldwell is among the well known and successful operators in tire fabrics. The Caldwell Co. control the output of several large mills.

T. F. O'Brien, formerly identified with a prominent rubber culture company is now a partner in a well known Canton, Ohio drug house, as well as being a successful operator in oil lands.

Mr. Guy W. Parsons, assistant treasurer of the United States Rubber Co., was recently called to Kansas City, Mo., by the illness of his mother. Her death occurred in that city on Monday, November 18.

Mr. A. Bamberger, manager of the New York office of Meyer Cohn, of Hanover, Germany, expects to sail for Europe in a few days in the interest of his constantly increasing American trade.

MR. GOUGH CHANGES HIS OFFICE.

Mr. Wallace L. Gough announces a change in location of his office from 108 Water street, to 2 and 4 Stone street, New York City. The new telephone number is 1480 Broad. Cable address "Wallagough."

MR. MANDERS THANKS HIS AMERICAN FRIENDS.

Mr. A. Staines Manders, the organizing manager of the International Rubber Exposition recently held in New York, and Miss D. Fulton, the secretary of that Exposition, sailed from New York for England on the steamship *Caronia*, November 16. They arrived in New York early in April last, and the intervening months were devoted exclusively to the big rubber show. Mr. Manders had also made several preliminary visits to this country in connection with this enterprise. Many friends were at the dock to see them off and to wish them a pleasant voyage. Mr. Manders expressed himself as very much gratified, not only with the success of the enterprise to which he has devoted so much time and work, but with the way in which he had been received by the American rubber trade; and he said that he wished to thank the hundreds of friends he had made in this country, both for their assistance in making the Rubber Show so successful, and for the many agreeable recollections that he carries away of his six months in America.

AN EXPERT ON THE RUBBER SHOW.

Mr. W. P. Wilson, the managing director of the Commercial Museum of Philadelphia, is an expert on exhibitions, as he has had charge of a continuous industrial and commercial exhibition in Philadelphia for some years. His opinion of exhibitions in general, therefore, is one of more than ordinary value, and Mr. Manders may well feel complimented in receiving the communication given below from Mr. Wilson. This is only one of many complimentary letters received by Mr. Manders, but this is particularly worth quoting because of its authoritative source:

THE COMMERCIAL MUSEUM,
Thirty-fourth Street, Below Spruce Street.
PHILADELPHIA, October 28, 1912.

MR. A. STAINES MANDERS, Manager Third International Rubber & Allied Trades Exhibition, New Grand Central Palace, New York, N. Y.:

MY DEAR MR. MANDERS.—I came home the other day after visiting the Rubber & Allied Trades Exposition in New York, with a new mass of knowledge relating to rubber and its production over all quarters of the globe. Although I had been over the building before the exhibit was opened and had seen something of the magnitude of the display, I really had no adequate conception of what this exhibition was to be. Its magnitude was beyond anything that I had in mind.

The whole arrangement and organization of the exposition seemed to me to be well done and followed out on excellently-laid lines. The only regret I had on leaving it was that I could not return and spend ten days in studying the great diversity of products, rubber and allied, which you had brought together.

A graphic exhibit of this kind does more than anything else to impress one with the great value and extensive use of this absolutely necessary product. The Exposition, a great success in every way, I hope repaid you for your painstaking and hard work which I know full well an exposition of this kind requires.

Yours very truly, W. P. WILSON, Director.

A MANUFACTURER'S VIEW OF THE EXPOSITION.

Editor, INDIA RUBBER WORLD: Dear Sir.—

Now that the crude rubber exhibition is a thing of the past, one wonders how much good has come of it.

It was my privilege to spend a whole week at the Grand Central Palace, taking in all the lectures and discussions during the conferences. After returning home and digesting the many things I learned there, I could not help but feel that we fail to make the most of our opportunities.

We on this continent seem to be imbued with the idea that if we open up a little in a discussion we are surely going to expose our knowledge to others, and in that are giving something away. But, coming down to hard facts, what have we got to give away? Is there anything we know that the average intelligent rubber company does not already know? I think not. It is foolish to think otherwise; if anyone has a machine more advanced than others it is quite within reason to keep it secret as long as possible, but to think we are ahead of others in the technical understanding of the rubber business is at once erratic and foolish.

I heard some men say that the Exhibition and conferences were of no particular use to them. In such cases it was surely their own fault. Any man with a modicum of common sense, who was looking for and wanted information, surely found it there. I have been twenty-one years in the business and have spent much time in the technical part of it, and I must say I learned much. There were learned men from different parts of the world whom we may never have the opportunity of meeting again. To engage in conversation with these men was to realize quickly how willing they were to open up and to give one a tremendous amount of the most valuable information—information that cannot be bought; and I for one feel that this exhibition afforded one of those opportunities rarely obtained in our business. Yours truly, MANUFACTURER.

A WORD OF WARNING.

Editor, THE INDIA RUBBER WORLD:

In reference to the Rubber Show recently held in New York, it has suggested itself to me that, whilst all manufacturers received much benefit from being in attendance, some may become so over-enthusiastic as to be led to the excessive uses of some of the grades, without sufficient tests, both as to percentages to be used and the proper working of the rubber, as well as the time to cure, and under what pressure.

It would seem to me to be well to caution those, not yet well informed, to the end that they should commence with, say, one to two per cent., and make *their own experiments,* as they finally must stand or fall by their own acts.

Time, only, gives the final test to rubber, and I earnestly recommend everyone to not follow too closely advice not proved by actual personal knowledge.

The whole rubber trade is now in a most critical position—we are at the apex in the use of Parás, African and Central rubbers, and at the base in the use of Ceylon, Strait Settlements and kindred plantation grades, and there are such radical differences in coagulation, locality and climate that special expert knowledge must be had if the uses of plantation rubber in substitution of other, proved, grades be successful.

As in a crossing, I can only advise, "STOP! LOOK! LISTEN!

Respectfully submitted,

New York, November 21, 1912. ROBT. B. BAIRD.

AS SEEN BY A FRIENDLY VISITOR.

THE INDIA RUBBER WORLD tried to acquit itself creditably at the Rubber Exposition recently held in New York City, and it hopes that it succeeded in that worthy purpose. The following paragraph would seem to indicate that it did. It is taken from a column and a half description of the Exposition which appeared in a recent number of the *Daily Chronicle* of Georgetown, British Guiana, written by the paper's special correspondent:

"Of course, our first attention was given to the space devoted to THE INDIA RUBBER WORLD, which was decorated with a map bearing the names of all the countries where it is circulated. A wonderful portrait painted on hard rubber of Mr. Goodyear, of Vulcanite fame, one of Mrs. Goodyear and Mr. Webster, on the same rubber, hung on the walls. These portraits are very valuable and were heavily insured. Specimens of all rubber-bearing trees, collected, arranged and named by Miss Pearson, were shown, and all sorts of rubber literature, including Mr. Pearson's latest on his visit to the tropics—in which British Guiana is not included. Mr. Pearson, however, assured me that the next book should be all about British Guiana, which is promising. In stoppered bottles, Hevea and all other seeds were shown, personally collected, as were the rubber snakes, centipedes, lizards, spiders and other familiar objects. Wonderfully lifelike these were, very much admired."

RETROSPECT OF THE NEW YORK RUBBER EXPOSITION.

In discussing the features of the recent exposition in the columns of the "Gummi-Zeitung," Mr. E. G. Salmon, who represented various European interests, expresses the opinion that both Germany and England missed a valuable opportunity of showing their capacity as makers of rubber machinery. He adds that while the exposition was a very good display of crude rubber, manufacture and machinery were much less efficiently represented.

The importance is recognized of the direct relations established between Eastern planters and the American market, which, it is added, will lead to the former dealing with New York directly, instead of through London. This would possibly lead to a reduction of rubber prices. American manufacturers, it is remarked, are all looking for cheaper rubber and would welcome any methods tending in that direction.

It was noticed at the Exposition that American manufacturers much appreciated the opportunity of seeing rubber, if not actually in cultivation, at least in the stages least removed therefrom. Whatever the final mode of purchase might be, it was doubtless to the advantage of both seller and buyer to know each other's peculiar needs, in a manner possible only through personal association. One prominent importer was heard to remark that he would at all times prefer to do business with a buyer acquainted with the goods he was bargaining for, rather than with one devoid of that knowledge. This personal coming together of producer and purchaser was inevitably to the advantage of both.

THE PENNSYLVANIA RUBBER CO. OPENS A PARK.

The days have gone by when manufacturers looked upon their employes as simply so many machines from which the maximum amount of work was to be extracted. Employers now realize that sound bodies and contented minds are desirable for their employes, not only from the standpoint of humanitarianism, but from the standpoint of efficiency; and manufacturers of the more advanced sort are taking steps for the physical and moral welfare of those depending upon them. As an illustration of this tendency, the Pennsylvania Rubber Co., of Jeannette, Pennsylvania, may be cited, which has recently opened a fine park in that city for the benefit of its employes. It is called Paruco Park. The significance of the word "Paruco" will be fairly obvious to the analytical mind, being a composite of the name Pennsylvania Rubber Co.

Paruco Park is a sixty-acre tract of wood and meadow land on a large knoll back of the company's works, and is admirably adapted for a recreation ground. The park was opened with appropriate exercises which were attended by a thousand of the company's employes and their friends. Refreshments in bountiful quantities were furnished for all who attended, and 500 children were given park membership badges, which entitled them to admission to the park any time during the next year. The enclosure contains an ample baseball field, besides equipment for various other sports. The entire expense of fitting out and maintaining this magnificent playground is borne by the company.

THE PARK OPENED BY THE PENNSYLVANIA RUBBER CO., AT JEANNETTE, PA.

NO CAUSE FOR ALARM.

A NUMBER of magazine writers have done excellent work during the last two or three years, in calling attention to "occupational diseases," that is, the troubles that workmen are especially liable to in various branches of manufacture. In a recent contribution of this sort there was a short paragraph devoted to rubber factories which reads as follows:

"Workers in the india rubber industry suffer frequently from the fumes of carbon disulphide. It brings on a dull headache, confused sight, vertigo, unrestrained inclination to talk, which in turn is followed by moodiness, irritability, insomnia and insensibility to pain in many parts of the body."

There is no great cause for alarm, however, in this particular charge against the rubber industry, because carbon disulphide is used in a very small department of rubber manufacture, being employed only in the making of a few specialties. The number of rubber workers, therefore, who suffer from carbon disulphide fumes is a small percentage, and where these fumes do exist special care is taken with the ventilation.

A NEW RUBBER HOUSE IN SYRACUSE.

THERE is a new rubber jobbing house dealing in druggists' sundries and rubber goods in Syracuse, New York. It is called The Wm. G. Yeckel Co., and is composed of William G. Yeckel and William H. Kemp. Mr. Yeckel was connected for fifteen years with the Syracuse Rubber Co., during the last five years of that time acting as the company's buyer of druggists' sundries. Mr. Kemp was for many years connected with the Goodyear Rubber Co.'s office in Buffalo, and was later a member of the firms of Hall & Kemp, and the Kemp Rubber Co. Both men are widely known through central New York.

AMERICAN TIRES ABROAD.

THAT American-made tires are pushing ahead in foreign countries in competition with the European product is indicated in a contract made by Backdahl & Co., of Stockholm, for 750 sets of the United States Co. tires for taxicab service in Norway, Sweden, Denmark and Finland. As the price asked for American tires in Europe is considerably in advance of that charged for the native product, competition must be founded on a basis of quality and mileage service.

Commenting on the general trend of the tire industry in foreign countries, John B. Tower, export manager of the United States Tire Co., remarks that in this country tires must necessarily be constructed to meet a wide variety of road conditions, many of them extremely bad, which explains why our tires show up so well in comparison when they are tested out on European highways, which, generally, are far superior to American roads. The United States Tire Co. now has agents in Japan, the Philippines, Australia, Chile, Uruguay, Brazil, Venezuela, Panama, Costa Rica, Cuba, Porto Rico, Mexico, Finland, Norway, Denmark and Sweden, and, of course, in Canada, and it sells a great many tires in Germany, France, Egypt and South Africa.

FIRE IN A RAINCOAT FACTORY.

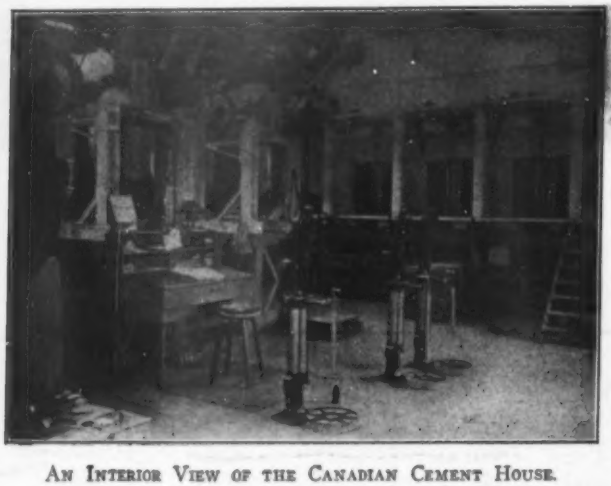
THE building occupied as a factory by the Standard Raincoat Co. of Milford, Massachusetts, was destroyed by fire on October 30 last. It was a 4½ story wooden structure, and the fire was too far advanced before the arrival of the firemen to be checked. The entire loss on the building and stock was placed at $40,000.

A JERSEY RUBBER PLANT BURNS DOWN.

THE plant of the Harmer Rubber Works in East Millstone, New Jersey, was destroyed by fire, October 29, entailing a loss of $100,000. A locomotive, rushed from New Brunswick, aided in extinguishing the flames by pumping water from the Raritan canal.

A CANADIAN CEMENT HOUSE.

PROBABLY few rubber factories make the same quantity and variety of cement as The Canadian Consolidated Rubber Co. of Montreal, Limited. The company being a manufacturer of shoes, waterproof clothing and general mechanical goods, uses an immense quantity of cement. In addition to these lines,

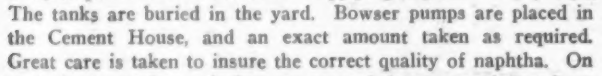


AN INTERIOR VIEW OF THE CANADIAN CEMENT HOUSE.

the company supplies large quantities to the leather boot and shoe factories, of which Montreal is the centre for Canada.

The Cement House is probably not excelled in America. It contains 52 churns of various sizes, the largest having a capacity of 5,200 pounds. The method of supplying naphtha is by pumps. The tanks are buried in the yard. Bowser pumps are placed in the Cement House, and an exact amount taken as required. Great care is taken to insure the correct quality of naphtha. On arrival of a tank, a telephone message brings an assistant from the laboratory, who immediately makes the usual hydrometer tests. Afterwards evaporation tests are carried on in the laboratory. This applies to every tank.

The building is constructed on a principle particularly suited



ANOTHER VIEW OF THE CANADIAN CEMENT HOUSE.

for a business of this character. Should an explosion take place, it would take the roof off the supporting walls, leaving the walls intact, but owing to the use of the Bowser Pump no clear naphtha is ever lying around, which of course reduces the chance of an explosion to a minimum. Perfect cleanliness is the order of the day, and instead of being the usual dirty, untidy corner, the cement department of the Canadian Consolidated Rubber Co. is one of the cleanest, and is a pleasure to the eye of any rubber man.

THE RUBBER TRADE IN CANADA.

CANADIAN imports of manufactures of india-rubber and gutta-percha for the fiscal year ended March 31, 1912, by countries, are officially stated to have been in value as follows:

	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Boots and shoes...	$40,614	$53	...	$40,667	$10,166.75
Belting	46,578	185	$578	47,341	13,018.91
Clothing and waterproof cloth	30,564	4,495	367	35,426	12,399.10
Hose	100,495	....	51	100,546	38,191.10
Packing and mats..	70,206	606	465	71,277	24,946.95
Vehicle tires	651,316	70,849	16,212	738,377	258,431.95
All other	644,983	12,290	51,371	708,644	194,879.78
Total, 1911-12..	$1,584,756	$88,478	$69,044	$1,742,278	$552,034.54

There may also be noted the following imports, not classified by the customs as "rubber goods," but having a relation to the industry:

	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Webbing, elastic and non-elastic	$265,794	$8,244	$24,801	$298,839	$59,767.80
Stockinettes for rubber footwear.	47,727	1,760	.....	49,487	7,423.05
Duck for rubber belting and hose.	106,960	6,776	151	113,887	free
Rubber thread..	21,853	.....	.....	21,853	free

EXPORTS OF CANADIAN RUBBER GOODS.

Belting	$60,613	All other	$80,666
Hose	6,517		
Footwear	122,613	Total	$270,500
Clothing	91		

DISTRIBUTION OF RUBBER GOODS EXPORTS.

To	Value.	To	Value.
Great Britain	$38,743	Chili	$215
Bermuda	450	Denmark	1,311
Australia	48,277	France	7,195
British Guiana	277	French Africa	2,116
B. South Africa	14,143	Germany	10,556
B. India	38	Italy	520
B. West Indies	43	Japan	82
New Zealand	34,814	Miquelon & St. Pierre.	59
Other British Possessions	513	Mexico	884
Newfoundland	63,431	Norway	164
Alaska	4	Spain	4,281
Argentina	545	Sweden	1,493
Belgium	8,790	United States	31,556
			$270,500

IMPORTS OF RAW MATERIALS.

	Pounds	Value
India-rubber and gutta-percha	4,431,335	$4,250,269
Rubber recovered; rubber substitute; hard rubber in sheets	4,870,394	792,444
Rubber, powdered, and rubber waste..	2,452,944	289,814
Rubber thread not covered	11,289	21,853
Total, 1911-12.....	11,765,962	$5,354,380

ITHACANS TO PLANT RUBBER IN MEXICO.

THE American-Mexican Rubber and Coffee Corporation, with principal office at Ithaca, was incorporated in New York State November 12 with a capital of $2,000,000, to cultivate rubber and coffee lands in Mexico. The directors are: William C. Douglas, Isaac K. Bernstein, Fred H. Smith, Arthur N. Gibbs, Benjamin Johnson, Robert A. Heggie, E. D. Button, Edwin S. Banks, Alfonso R. Swayer, Ithaca; Joseph Bondy, Syracuse, and Frank E. Pino, Tapachula, Chiapas, Mexico.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED OCTOBER 1, 1912.

No. 1,039,697. Machine for coating hose. H. Z. Cobb, Chelsea, Mass.

1,039,731. Coupling for train pipes. W. A. Greenlaw, Melrose Highlands, Mass., assignor to The Greenlaw Manufacturing Co., Boston, Mass.

1,039,760. Vehicle tire and rim. E. H. Koken, Akron, Ohio.

1,039,805. Resilient tire. E. Rimailho, Neuilly-sur-Seine, France.

1,039,838. Motorcycle stand. S. Y. Steinberger, Peoria, Ill.

1,039,843. Combination non-refillable bottle and drinking cup. F. Fortunatus, Syracuse, N. Y.

1,039,857. Spring-wheel. U. Grant Weidman, Knightstown, Ind.

1,039,877. Combination syringe case and supporter. J. W. Allan, Omaha, Neb.

1,039,897. Resilient tire for vehicles. H. A. Carmichael, West Lorne, Ontario, Canada.

1,039,898. Convertible-tread wheel. H. W. Clapp, Berkeley, and B. C. Edgar, San Francisco—both of California.

1,039,943. Motorcycle. E. O. Himes, Albion, Ind.

1,039,946. Roll for cotton-gins and machines for burring wool. G. E. U. Huckaby, Houston, Tex.

1,040,074. Cushion tire for vehicle wheels. M. M. Weiss, Detroit, Mich.

1,040,114. Pneumatic cushioned wheel. I. H. Babcock, De Ruyter, N. Y.

1,040,134. Method of rolling tubing. R. E. Brock, Monessen, Pa., assignor to Pittsburgh Steel Products Co.

1,040,139. Hose-supporting clasp. D. H. Buell, Bridgeport, Conn.

1,040,157. Wheel for vehicles. W. Dalton, Schenectady, N. Y.

1,040,173. Resilient wheel. G. Dorffel, Oakland, Cal.

1,040,246. Tire protector. R. A. Willett, Warren, Ohio, assignor of one-half to E. J. Maxwell and one-half to G. M. Hughson, Los Angeles, Cal.

Trade Mark.

64,229. The Manhattan Rubber Mfg. Co., New York. The word *Condor*. For belting.

ISSUED OCTOBER 8, 1912.

1,040,275. Demountable rim. J. C. Cole, assignor to Fisk Rubber Co.—both of Chicopee Falls, Mass.

1,040,276. Force and suction pump. A. J. Coleman, Pittsburgh, Pa.

1,040,285. Manufacture of chewing gum. J. D. Darling, Philadelphia, Pa.

1,040,311. Air-supply device for firemen. J. D. Halloran, New York.

1,040,334. Rubber valve for pumps and the like. T. Howland, Mackay, Queensland, Australia.

1,040,426. Spring wheel. L. Sanders, Cravens, La.

1,040,431. Cushion tire. Paul Schneider, Webster Groves, Mo.

1,040,436. Resilient wheel. A. Seibert, Harvey, Ill.

1,040,471. Vehicle wheel tire. C. Van Smith, Kansas City, Mo.

1,040,511. Automobile wheel. H. B. Coats, Veedersburg, Ind.

1,040,512. Spring wheel. H. B. Coats, Veedersburg, Ind.

1,040,569. Method of making seamless tubes. J. W. Offutt, Ellwood City, Pa., assignor to The Shelby Steel Tube Co., Pittsburgh, Pa.

1,040,581. Tire for automobiles, vehicles or the like. A. W. Rowe, Philadelphia, Pa.

1,040,599. Resilient hub for wheels. C. A. White and F. McLaughlin, London, Ontario, Canada.

1,040,647. Pneumatic tire. M. A. Dees, Pascagoula, assignor to American Tire Co., St. Louis, Mo.

1,040,737. Apparatus for producing rubber bulbs for atomizers, syringes, etc. J. A. Murray, assignor of one-half to J. L. Mahoney—both of New Haven, Conn.

1,040,865. Non-skidding tire. J. G. Boss, Denver, Col.

1,040,877. Tire-repairing case. C. Byrne, Pompton Lakes, N. J., assignor of one-half to G. W. Drew, Florida, N. Y.

1,040,920. Tire. H. G. Fiske, New York, assignor to The Columbia Motor Car Co., Hartford, Conn.

1,040,926. Hose-band. H. Gibbs, assignor to W. D. Allen Mfg. Co.—both of Chicago, Ill.

Design.

43,105. Garter. R. J. Freeman, Overbrook, Pa., assignor to Pioneer Suspender Co., of Pennsylvania.

Trade Marks.

60,330. The Star Rubber Co., Akron, Ohio. The word *Saturn*. For household rubber gloves and bath caps.

60,333. The Star Rubber Co., Akron, Ohio. The word *Jupiter*. For household rubber gloves and bath caps.

65,059. The L. Candee & Co., New Haven, Conn. The word *Es-hi-mo*. For rubber boots and shoes.

65,060. The L. Candee & Co., New Haven, Conn. A picture of an eskimo. For rubber boots and shoes.

ISSUED OCTOBER 15, 1912.

1,041,012. Bathing suit. J. F. Burke, Philadelphia, Pa.

1,041,026. Tire-tightener. T. F. Chrane, Cravette, Ark.

1,041,062. Temporary locking-piece for transversely-split vehicle-wheel rims. R. W. Funk, Weehawken, N. J.

1,041,074. Roll for leather-working machines. R. H. Harris, Boston, Mass., assignor to the Turner Tanning Machine Co., Peabody, Mass.

1,041,097. Combined vehicle-hub and shock-absorber. C. L. Kennedy, Winnipeg, Canada.

1,041,104. Garment-support. F. E. Krauch, Indianapolis, Ind.

1,041,139. Anti-skid device for block tires. S. S. Miller, Akron, Ohio, assignor to Consolidated Rubber Tire Co., New York.

1,041,172. Wiper for windows and the like. W. A. Roth and F. O. Moldenhauer, Chicago, Ill.

1,041,182. Cushion-tired wheel. W. D. Simpson, Columbia, S. C.

1,041,216. Automatic elastic check-valve for pneumatic tires. P. P. Wood, Hot Springs, Ark.

1,041,244. Resilient wheel. C. J. Craig, Lathrop, Mo.

1,041,336. Pneumatic-pressure gage. O. Olsen, Oakland, Cal., assignor of one-half to H. T. Carvin, Alameda, Cal.

1,041,350. Pneumatic tire for vehicle wheels. E. R. Riedinger, assignor of one-half to A. Fraser—both of London, England.

1,041,391. Air-brake coupling. O. P. Wilhelm, Michigan City, Ind.

1,041,408. Supporter for articles of apparel. A. B. Beck, Cranford, N. J., assignor to M. W. Schloss, New York.

1,041,460. Spring attachment for vehicles. G. Graybill, York, Pa.

1,041,519. Motor wheel for cycles. A. C. Seibak, San Francisco, Cal.

1,041,526. Core-filling compound for pneumatic tires and process of making the same. H. M. Suss, Fall River, Mass.

1,041,544. Apparatus for manufacturing rubber tires, etc. Emrys T. Williams, Akron, Ohio.

1,041,567. Detachable and divisible rim for motor cars and other vehicles.

1,041,632. Tire lock. T. J. Kelly, Denver, Col.

1,041,660. Tire tool. A. A. Nelson, Washington, D. C.

1,041,702. Shock-absorbing hub for vehicle wheels. J. W. Tilton, assignor of one-half to G. Hoefer, J. C. Adams and N. W. Young—all of Atlantic City, N. J.

Trade Marks.

62,741. The Continental Supply Co., St. Louis, Mo. The initials C. S. Co. intertwined. For rubber machinery belts, etc.

ISSUED OCTOBER 22, 1912.

1,041,739. Tire. W. G. Chipley, New Orleans, La.

1,041,774. Bottle-stopper. J. D. Gerahty and J. E. Hager, New York.

1,041,907. Coupling gasket. J. M. Towne, East Orange, N. J., assignor to Safety Car Heating & Lighting Co., of New Jersey.

1,041,958. Golf ball mold. E. W. Buckau, New York.

1,042,016. Tire traction device. R. Livingston, Los Angeles, Cal.

1,042,026. Tire casing. E. B. Nathan, New York.

1,042,035. Resilient vehicle wheel. A. D. Ray, Cleveland, Ohio.

1,042,065. Automobile tire. W. J. Woodcock, Brooklyn, N. Y.

1,042,157. Tire protector. C. J. Shumaker, Tupelo, Miss.

1,042,178. Tire. A. G. Walker, Pacific Junction, Ia.

1,042,209. Closure for vessels. J. C. Eichhorn, assignor to The Victor Jar Co.—both of Detroit, Mich.

1,042,214. Vehicle wheel. H. S. Grace, San Francisco, Cal.

1,042,237. Bottle for jar closure. W. Koufman, Paterson, N. J.

1,042,327. Life-saving garment for aviators. J. J. Costanzo, Alexandria, Egypt.

Trade Mark.

63,649. General Electric Co., Schenectady, N. Y. The word *Acme*. For electrical insulating tape.

ISSUED OCTOBER 29, 1912.

1,042,377. Tire lock for automobiles. B. A. Alperin, New York.

1,042,392. Automobile tire. C. L. Butler, Chicago, Ill., assignor to American Steel Tire Co., Milwaukee, Wis.

1,042,426. Tire. W. F. Gaul, Jersey City, N. J., assignor of one-half to E. H. Fahey, Philadelphia, Pa.

1,042,478. Rim. A. D. Reid, West Chester, Pa.

1,042,479. Rim. A. D. Reid, West Chester, Pa.

1,042,592. Resilient tire. J. M. O'Rear, Birmingham, Ala.

1,042,593. Manufacture of tubing. P. Patterson, Pittsburgh, Pa.

1,042,604. Belt fastener. W. A. Roos, Newark, N. J.

1,042,632. Elastic fabric or webbing. C. J. White, assignor to C. J. White Mfg. Co.—both of New Britain, Conn.

1,042,649. Tire-making machine. L. D. Crosby, Hartford, Conn.

1,042,684. Hose-coupling. C. E. Judkins, Columbia River, Wash., assignor of one-half to C. Masini, Coeur d'Alene, Idaho.

1,042,705. Bottle atttachment. R. McConnell, Barton Heights, Va., assignor of one-half to G. B. Hutchings, Richmond, Va.

1,042,711. Vacuum cleaning device. A. E. Moorhead, assignor to American Rotary Valve Co—both of Chicago, Ill.

1,042,713. Pneumatic scrubbing appliance. A. E. Moorhead, San Francisco, Cal., assignor to American Rotary Valve Co., Chicago, Ill.

1,042,722. Anti-skidding device. T. W. Simmons, Bridgeport, Conn.

1,042,795. Apparatus arranged on locomotives and other power-propelled vehicles for utilizing the resistance of the air. J. Jaensch, Breslau, Germany.

1,042,870. Back strap for shoes. C. M. Benninghaus, Govans, Md.

1,042,875. Lock for vehicles. E. M. Bishop, Kingston, N. Y.

1,042,884. Tire filler. W. B. Buckley, Washington, D. C., assignor to Air-Ease Tire Filler Co., of Delaware.

1,042,909. Device for milk bottles. K. Graham, Baltimore, Md.

1,042,939. Suspenders. S. Martin, Chelsea, Mass.

1,042,941. Cushion-tire. W. D. McCormack, Nashville, Tenn.

1,042,943. Cushioned horseshoe. G. E. McKinnon, Little Falls, N. J.

1,043,024. Pneumatic cleansing implement for removing dust. A. E. Moorhead, San Francisco, Cal., assignor to American Rotary Valve Co., Chicago, Ill.

1,043,025. Pneumatic cleansing apparatus. A. E. Moorhead, Chicago, Ill., assignor to American Rotary Valve Co. of Illinois.

Trade Marks.

62,245. J. H. Graham, New York. The words *"Kork-Tred."* Heels for boots, shoes, etc.

64,053. The American Mills Co., New York. The word *Reelastic.* Elastic webbing.

65,297. Revere Rubber Co., Providence, R. I. The word *Shower.* For rubber hose.

65,631. The Imperial Merchandise Co., Perry, Ohio. The word *Daylight.* For fruit-jar rings.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1911.

**Denotes Patents for American Inventions.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 2, 1912.]

13,867. Air tubes. Marquis G. Fossi, 6 Piazza Peruzzi, Florence, Italy.

13,881. Vehicle wheels. A. H. Roberts, "Rockbank," Victoria street, West Brunswick, Melbourne, Australia.

13,897. Horseshoes. F. Gundlach, 4b, Vorwerksgasse, Celle, Germany.

13,951. Horseshoes, etc. G. A. Bennett, 14 Blythswood road, Goodmayes, Essex.

*13,973. Vehicle wheels. J. A. Anglada, 225 West Fifty-seventh street, New York, U. S. A.

*13,974. Vehicle wheels. J. A. Anglada, 225 West Fifty-seventh street, New York, U. S. A.

14,015. Boots, etc. J. J. Hartopp, Rutland street, Leicester.

14,078. Vehicle wheels. C. G. Kleinschmidt, 19 Siepenstrasse, Herne, Westphalia, Germany.

14,087. Wheel tires. Albion Motor Car Co., and T. B. Murray, South street, Scotstoun, Renfrewshire.

14,119. Collapsible boats, etc. W. J. Simpson, 28 Clerkenwell road, London.

*14,145. Hot water bottles, syringes. L. F. Gilletie, 11 Wall street, Concord, New Hampshire, U. S. A.

*14,206. Firemen's dress. F. W. Vinton, 48 Fulton street, Weehawken, N. J., U. S. A.

14,250. Vehicle wheels. G. P. Milnes, Whitehall, Stroud, Gloucestershire.

14,304. Treads for tires, boots, etc. G. C. Taylor, "Ravencar," Helsby, Cheshire.

14,411. Vehicle wheels. A. C. Frost, Hazelmere, Lichfield road, Four Oaks, Warwickshire.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 9, 1912.

14,495. Toys, games. A. Jud, 83 Stalden, Solothurn, Switzerland.

14,524. Fire valves. W. de C. Prideaux, 12 Frederick place, Weymouth, Dorcetshire.

14,584. Floor mats. P. M. Justice, 55 Chancery lane, London.

14,693. Covers for food vessels, etc. B. J. Letherland, 562 Woodborough road, Nottingham.

14,696. Stair treads. Safety Tread Syndicate, 15 Barbican and E. S. Higgins, 21 Cornford Grove, Balham.

14,761. Door stops. C. W. Wood, 372 Euston road, London.

*14,858. Erasers. A. Tregoning, 841 North Bunker Hill avenue, Los Angeles, Cal., U. S. A.

14,892. Vehicle wheels. Vicomte M. A. M. J. de Grassin, Chateau de Louvieres, Bayeux, Ca'vados, France.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 16, 1912.]

14,910. Heel pads, etc. H. Thorne, 241 Collins street, Melbourne, Australia.

14,930. Balls. P. A. Martin, Granville street, and J. Stanley, 137 Ivor road, Sparkhill—both in Birmingham.

14,939. Stuffing-boxes. J. Walker & Co., and J. Walker, Lion Works, Garford street, Poplar, London.

14,940. Stuffing-boxes, etc. J. Walker & Co., and J. Walker, Lion Works, Garford street, Poplar, London.

14,943. Artificial leather. E. D. Delahaye, 40 Boulevard de l'Est, C. Vesinet, France.

15,045. Heel protectors, etc. F. Knipp, 51 Bessungerstrasse, Darmstadt, Germany.

15,164. Testing golf balls. R. Ramsbottom, Scarrwheel, The Cliff, Higher Broughton, Manchester.

15,288. Tapping rubber trees. G. S. Brown, 46 Hammerfield avenue, Aberdeen.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 23, 1912.]

15,353. Wheel tires. A. R. Harris, 84 Mount Pleasant, Cross street, Sale, Manchester, England.

15,362. Vehicle wheels. J. Windibank, 123 Ribblesdale road, Streatham, London.

*15,415. Wheel tires, etc. J. W. Driscoll, P. O. Box 143, Central City, Colorado, U. S. A.

15,417. Wheel tires. D. Maggiora, 153 Warwick street, Belgravia, London.

*15,450. Block tires. C. B. Morris, 5821 Chester avenue, Philadelphia, Pa., U. S. A.

15,496. Vehicle wheels. C. H. Sims, 18 Sir Thomas White road, Coventry.

15,557. Mud guards for wheels. F. Stenning, 29 Cambridge road, and W. Bailey, 12 Cambridge road—both in Sidcup, Kent.

15,566. Stocking-suspenders, etc. J. D. Gillespie, 481 Grimsby road, Cleethorpes, Lincolnshire.

15,588. Sole and heel protectors. J. G. West, 8 Fairfield road, Kingston, Surrey.

15,713. Wheel tires. W. Edgell, Westfield House, and A. T. Edgell, Redfield road—both in Midsomer Norton, Somerset.

15,761. Artificial leather. E. Reidel, 3 Rupprecht Strasse, Mannheim, Germany.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 30, 1912.]

15,835. Closing tire punctures. F. H. Hall, Gannaway Gate, Norton, Lindsey, Warwickshire.

15,938. Vehicle wheels. T. H. Rushton, 158 Grimsby road, New Cleethorpes, Lincoln.

15,945. Substitutes for gutta-percha, etc. E. C. R. Marks, 57 Lincoln's Inn Fields, London.

15,973. Boots. F. Knipp, 51 Bessungerstrasse, Darmstadt, Germany.

16,108. Removing tires. J. Hornby, 97 Kensington road, T. Sawyer, 45 St. John's road, Birkdale, and T. Rimmer, Linaker street—all in Southport, Lancashire.

16,139. Inflating pumps. H. Lea, 38 Bennett's Hill, Birmingham.

16,149. Tire attachments to rims. R. Brown, 2 Eddington street, Tollington Park, and C. Pallash, 14 Boundary road, Wood Green—both in London.

16,157. Head-washing appliances. J. S. Withers, 323 High Holborn, London.

16,164. Pressure gauges. Erste Suddeutsche Manometerbau-Anstalt und Federtriebwerkfabrik, J. C. Eckhardt, 72 Pragstrasse, Cannstatt, Germany.

16,189. Apparatus for making tire covers. F. H. Hall, Gannaway Gate, Norton Lindsey, Warwickshire.

16,212. Manufacture of packing. J. C. Cuthbertson, 113 Fenchurch street, London.

16,226. Head-washing apppliances. J. S. Withers, 323 High Holborn, London.

16,260. Horseshoes. A. W. Knight, 4 Upper street, St. Martin's lane, London.

16,276. Tapping rubber trees. H. F. Browell, Fairfield, Longdown, Guildford, Surrey.

16,326. Tire attachments to rims. A. Buckland, 41 Westfield road, Hornsey, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

441,273 (March 12, 1912). L. Prochazka. Elastic tire for automobiles and other vehicles.

441,324 (March 13). J. H. Messenger. Improvements in tires.

441,400 (March 16). J. B. Rozet. Elastic tire for bicycles, automobiles and other vehicles.

441,461 (March 18). P. Fontenelle. Improvements in pneumatic tires.

441,477. (March 18). "Farbenfabriken," formerly F. Bayer & Co. Process for preventing the glutination and resinification of substances resembling rubber.

441,404 (March 16). G. Evans. Improvements in removable heels.

441,514 (March 19). C. H. Myers. Anti-skid device for pneumatic tires.

441,534 (March 21). W. H. Bitnam. Anti-skid device for automobiles.

444,554 (March 4). A. M. P. Huchon. Elastic tire.

441,569 (March 20). T. Christopherson. Improvements in automobile and other tires.

441,568 (March 20). C. Beyer. Process for preserving the elasticity of rubber objects.

441,635 (March 22). P. G. Seward. Improvements in elsatic tires.

441,771 (March 26). Continental Caoutchouc and Gutta Percha Co. Improved air chamber for automobile wheels.

441,773 (March 26). M. A. Kennedy. Improvements in elastic tires.

441,655 (March 22). "Farbenfabriken," formerly F. Bayer & Co. Process for producing substance analogous to rubber.

441,840 (March 27). J. R. Salmon & E. W. Roy. Improvements in pneumatic tires.

441,881 (March 28). J. Bermudez de la Puenti. Improvements in air chambers of pneumatic tires.

442,056 (February 14). H. Bagieu. New method of fixing rubber to vehicle wheels by rims.

441,802 (February 19). "Farbenfabriken," formerly F. Bayer & Co. Process for production of rubber, its homologues and analogues.

442,107 (April 2). Arnold & Johnston. Improvements in pneumatic tires.

442,179 (April 4). G. Gray. Elastic automobile tire.

442,250 (April 21). P. Bourcet. Protection for pneumatic tires.

442,260 (April 6). B. W. Dinne. Tire for vehicle wheels.

442,231 (April 9). C. Beyer. Process for preserving the elasticity of rubber objects.

442,492 (April 12). A Steinhauser. Improvements in pneumatic tires.

442,521 (April 13). H. Döhne. Attachment to air cushions.

442,525 (April 13). G. L. Pauer. Apparatus for vulcanization and repair of pieces of rubber.

442,665 (April 18). K. Rechberg. Manufacture of covers for pneumatic tires.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Bobet, Ingénieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

THE GERMAN EMPIRE.

PATENTS ISSUED (with Dates of Validity).

252,104 (September 30, 1911). Process for recovery of rubber from rubber waste. The Moore Architectural and Engineering Co., Akron, U. S. A.

252,109 (December 5, 1911). Process for hot vulcanization of tire cover. Etablissements Bergougnan, Clermont-Ferrand, France.

252,111 (June 29, 1911). Rubber tires for motor trucks, etc., with inserted twisted wire. Heinrich Rentz, Goldberg, Silesia.

252,789 (February 8, 1912). Rubber or other elastic packing for steam doors. Haniel & Lueg, Düsseldorf-Gräfenberg.

252,705 (July 6, 1910). Manufacture of products resembling rubber. Chemiche Fabrik Flörsheim. Dr. H. Nördlinger, Flörsheim, a. M.

253,400 (July 27, 1911). Press with extensible core for vulcanizing tires. Lucien Morane, Paris.

253,269 (January 31, 1912). Adjustable rubber sole for shoes. Eugene Fuller and Joseph Rosenblatt, Providence, R. I., U. S. A.

THE KINGDOM OF BELGIUM.

PATENTS PUBLISHED.

248,432 (1912). "Farbenfabriken," formerly F. Bayer & Co., Elberfeld. Production of substance resembling rubber.

248,417 (1912). The Diamond Rubber Co., Akron, U. S. A. Process for improving inferior qualities of rubber.

247,981 (1912). "Farbenfabriken," formerly F. Bayer & Co., Elberfeld. Manufacture of product resembling vulcanized rubber.

248,080 (1912). M. Kochnitzky and A. Fried, Brussels. Process of extraction of resin from crude rubber.

247,627 (1912). Gesellschaft für Teerverwertung. G. m. b. H., Duisburg-Meiderich, Germany. Process of manufacturing a substance analogous to rubber.

247,518 (1912). G. Millienne, rue Richer 10, Paris. Appliance for gathering latex of rubber and gum trees.

247,901 (1912). C. E. Anquetil, place St. Michel, Marseilles. Process of making synthetic rubber.

247,493 (1912). H. Auzies, Toulouse, France. Process for making plastic substances resembling gutta percha.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending November 23:

COMMON STOCK, $25,000,000.

[The treasury of a subsidiary company holds $1,334,000.]

Last Dividend, October 31, 1912—1%.

Week November 2	Sales	3,715 shares	High	51⅝	Low	50¾
Week November 9	Sales	4,500 shares	High	53	Low	51
Week November 16	Sales	23,490 shares	High	56¼	Low	51⅜
Week November 23	Sales	52,450 shares	High	60⅝	Low	55½

For the year—High, 67⅞, May 21; Low, 45¼, February 1.
Last year—High, 48½; Low, 30½.

FIRST PREFERRED STOCK, $39,824,400.

Last Dividend, October 31, 1912—2%.

Week November 2	Sales	1,150 shares	High	107⅞	Low	106¾
Week November 9	Sales	1,400 shares	High	108⅜	Low	107
Week November 16	Sales	3,650 shares	High	109	Low	107⅛
Week November 23	Sales	1,066 shares	High	109⅜	Low	108¼

For the year—High, 116, May 20; Low, 105⅝, July 25.
Last year—High, 115½; Low, 104.

SECOND PREFERRED STOCK, $9,965,000.

Last Dividend, October 31, 1912—1½%.

Week November 2	Sales	... shares	High	....	Low	....
Week November 9	Sales	... shares	High	....	Low	....
Week November 16	Sales	310 shares	High	80½	Low	80
Week November 23	Sales	800 shares	High	80¼	Low	80

For the year—High, 85½, May 21; Low, 75, January 23.
Last year—High, 79; Low, 66.

SIX PER CENT. TRUST GOLD BONDS, $18,000,000.

Outstanding of the 1908 issue of $20,000,000.

Week November 2	Sales	17 bonds	High	103⅜	Low	103⅛
Week November 9	Sales	3 bonds	High	103⅜	Low	103
Week November 16	Sales	22 bonds	High	103⅜	Low	103
Week November 23	Sales	21 bonds	High	103⅜	Low	103¼

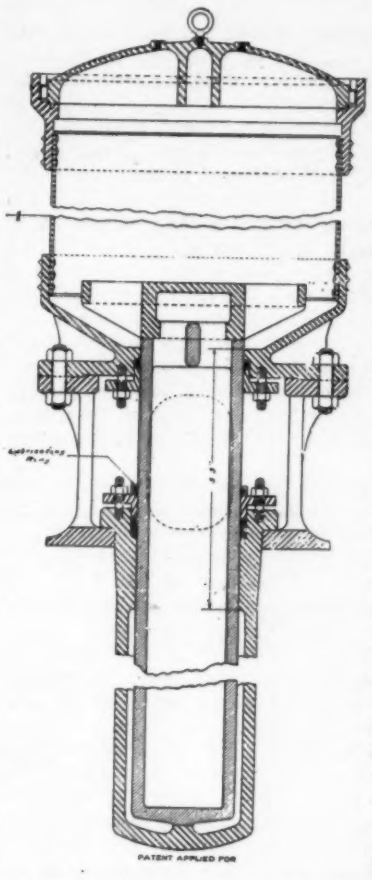
For the year—High, 105, February 24; Low, 103, October 19.
Last year—High, 105; Low, 101¾.

GENERAL BAKELITE CO. STARTS INFRINGEMENT SUITS.

The General Bakelite Co. has brought suits for infringements of its Bakelite patents against the Condensite Co. of America and several users of "Condensite," among them the Dickinson Manufacturing Co., of Springfield, Massachusetts; The Duranoid Mfg. Co., of Newark, and Hardman & Wright, of Belleville, New Jersey.

A NEW TIRE-HEATING PRESS.

THE revised design of the Akron-Williams Tire Vulcanizing Press, which is proving very popular for the curing of automobile tires at the present time, has a number of valuable improvements. As the expert will discover by the examination of the cross-section diagram which is here shown, the unusually long ram-bearings noticeable in this diagram insure its exerting pressure at right angles to the press lid, between which and the ram cap the molds are squeezed during the process. Even a slight amount of play in these bearings will permit the ram to slant considerably when fully extended and may leave the molds open a little on one side or the other. The design obviates this trouble.



In the ordinary construction the packing gland for the hydraulic ram is placed in the bottom of the vulcanizing chamber. It is difficult to re-pack this gland on account of its position. The condition of the packing cannot be determined while a cure is in process. A slight leakage through the hydraulic packing will permit cold water to enter the vulcanizing chamber, reducing the efficiency and uniformity of the cure.

The new design effectually overcomes this difficulty.

STATEMENT OF THE INDIA RUBBER WORLD.

Statement of the ownership, management, circulation, etc., of THE INDIA RUBBER WORLD, published monthly at New York, required by the Act of August 24, 1912.

Editor, Henry C. Pearson, Tompkins Corners, Putnam Co., N. Y.; managing editor, John P. Lyons, 150 West 91st St., New York City; business manager, Edward F. Pfaff, 94 Hawthorne St., Brooklyn, N. Y.; publisher, The India Rubber Publishing Co., 15 West 38th St., New York City.

Owners: (If a corporation, give names and addresses of stockholders holding 1 per cent. or more of total amount of stock.) Henry C. Pearson, Tompkins Corners, Putnam Co., N. Y.

Known bondholders, mortgagees and other security holders, holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: None.

(Signed) HENRY C. PEARSON, Editor.

BOSTON WOVEN HOSE AND RUBBER CO.

The directors of the Boston Woven Hose and Rubber Co. have declared a semi-annual dividend of $3 per share on the preferred stock, and a quarterly dividend of $3 per share on the common stock, both payable December 16, 1912, to stockholders of record December 5.

Review of the Crude Rubber Market.

THE fall in value of fine Pará in London, which had marked the latter part of October, bringing the price to 4*s.* 6*d.* on October 26, made further progress during the closing days of that month and the opening days of November. By the 6th it had reached 4*s.* 3¼*d.*, when the tide turned, the price of 4*s.* 5*d.* being established on the 7th.

During the succeeding portion of the month it ranged from 4*s.* 4¾*d.* to 4*s.* 6*d.*, thus keeping within a narrow margin and reaching 4*s.* 5*d.* on November 25, at time of writing.

While Pará thus recovered only part of the fall which had taken place, plantation rubber advanced in the four weeks from 4*s.* 2½*d.* to 4*s.* 3¾*d.*, having in the interim touched 4*s.* 5*d.* A month ago fine Pará stood at 4*s.* 6*d.*, while pale crêpe was at 4*s.* 2½*d.* At time of writing the prices are respectively 4*s.* 5*d.* and 4*s.* 3¾*d.*, a closer approximation being thus indicated.

In contrast with the two preceding fortnightly London auctions which averaged about 900 tons, that of November 5 only included 720 tons. The tone was firmer, the decline having been partially arrested, and prices being only 1*d.* below those of last auction. At the decline a good demand was created, which checked the downward tendency.

The second London November auction took place on the 19th, when 750 tons were offered. Although demand was not active, the improvement established in the outside market led to an advance at the opening of 2½*d.* per pound on the prices of the previous sale. A slight reaction took place on the second day.

While the recent political complications and the stringency of money affected the tone of the Antwerp sale of October 22, it was generally satisfactory in character. Of the 503 tons offered, 406 were sold; the average fall being about 3¾ per cent. Congo descriptions formed 75 per cent., and plantation 20 per cent., the balance being composed of various grades. At the sales of November 14, 315 tons Congo and 114 tons plantation were offered. Sales made were at an advance on valuations of about ⅝*d.* per pound.

The Havre sale of October 20 was marked by reduced demand, but 27 tons Congo were sold with an average fall of about 5 per cent. Owing to the reserve of sellers only about one-half of the 33 tons offered at Rotterdam, November 12, was sold, averaging slightly under valuations.

At the Amsterdam sale of November 15, about 40 tons were sold, chiefly *Hevea;* mostly at steady prices.

Messrs. Hecht, Levis & Kahn's statistics for end of October show visible supply as follows:

	1911. Tons.	1912. Tons.
Pará grades	6,862	5,225
Medium grades	2,439	3,976
	9,301	9,201

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, November 30—the current date:

PARA.	Dec. 1, '11.	Nov. 1, '12.	Nov. 29, '12.
Islands, fine, new	93@ 94	99@100	95@ 96
Islands, fine, old	96@ 97	.....	.....
Upriver, fine, new	103@104	105@106	106@107
Upriver, fine, old	107@108	.....	113@114
Islands, coarse, new	58@ 59	54@ 55	54@ 55
Islands, coarse, old	none here	.....	.....
Upriver, coarse, new	89@ 90	83@ 84	82@ 83
Upriver, coarse, old	none here	.....	.....
Cametá	60@ 61	55@ 56	55@ 56
Caucho (Peruvian) ball	89@ 90	82@ 83	81@ 82
Caucho (Peruvian) sheet	none here	.....	.....
Plantation Pará.			
Fine smoked sheet	117@118	108@109	111@112
Fine pale crepe	118@119	102@103	106@107
Fine sheets and biscuits	113@114	100@101	105@106
Centrals.			
Esmeralda, sausage	83@ 84	77@ 78	78@ 79
Guayaquil, strip	none here	.....	.....
Nicaragua, scrap	82@ 83	77@ 78	77@ 78
Panama	none here	.....	.....
Mexican plantation, sheet	.....	.....	.....
Mexican, scrap	81@ 82	76@ 77	76@ 77
Mexican, slab	none here	.....	.....
Managabeira, sheet	62@ 63	.....	.....
Guayule	47@ 48	57@ 58	58@ 59
Balata, sheet	86@ 87	.....	82@ 83
Balata, block	55@ 56	.....	54@ 55
AFRICAN.			
Lopori, ball, prime	101@102	96@ 97	98@ 99
Lopori, strip, prime	none here	.....	.....
Aruwimi	100@101	87@ 88	87@ 88
Upper Congo, ball, red	96@ 97	.....	97@ 98
Sierra Leone, 1st quality	84@ 85	.....	95@ 96
Massai, red	85@ 86	95@ 96	98@100
Soudan, Niggers	81@ 82	.....	.....
Cameroon, ball	63@ 64	.....	.....
Benguela	62@ 64	.....	73@ 74
Madagascar, pinky	75@ 76	.....	.....
Accra, flake	27@ 28	25@ 26	25@ 26
Pontianak	5⅝@ ..	.....	.....
EAST INDIAN.			
Assam	none here	.....	.....
Pontianak	5⅝ ..	6⅝ ..	6¾@ 7
Borneo	none here	.....	.....

Late Para cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	4$000	Upriver, fine	5$500
Islands, coarse	2$250	Upriver, coarse	3$700
		Exchange	16 3/8d.

Latest Manaos advices:

Upriver, fine	5$500	Exchange	16 5/16d.
Upriver, coarse	3$700		

African Rubbers.

NEW YORK STOCKS (IN TONS).

October 1, 1911	67	May 1, 1912	62
November 1	45	June 1	94
December 1	60	July 1	62
January 1, 1912	58	August 1	85
February 1	150	September 1	156
March 1	90	October 1	89
April 1	80	November 1	90

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During November the market has continued about the same as in October, the demand for paper being light, and almost entirely from out-of-town banks, rates ruling at 6@6¼ per cent. for the best rubber names and 6½@7 per cent. for others."

NEW YORK PRICES FOR SEPTEMBER (NEW RUBBER).

	1912.	1911.	1910.
Upriver, fine	$1.10 @ 1.22	$1.13 @ 1.20	$1.55 @ 1.90
Upriver, coarse	.87 @ .95	.94 @ .99	1.22 @ 1.42
Islands, fine	1.07 @ 1.13	1.06 @ 1.12	1.50 @ 1.82
Islands, coarse	.55 @ .59	.62 @ .64	.90 @ .92
Cametá	.61 @ .67	.66 @ .68	.90 @ .98

NEW YORK PRICES FOR OCTOBER (NEW RUBBER).

	1912.	1911.	1910.
Upriver, fine	$1.04@1.11	$1.00@1.12	$1.37@1.50
Upriver, coarse	.81@ .86	.90@ .96	1.02@1.20
Islands, fine	.99@1.06	.96@1.07	1.20@1.46
Islands, coarse	.53@ .56	.56@ .63	.73@ .90
Cametá	.56@ .61	.60@ .66	.75@ .89

Statistics of Para Rubber (Excluding Caucho).

	New York. Fine and Medium.	Coarse.	Total, 1912.	Total, 1911.	Total, 1910.
Stocks, Sept. 30.....*tons*	147	34 =	181	322	175
Arrivals, October	1,059	4 =	1,423	1,923	1,240
Aggregating.....	1,206	398 =	1,604	2,245	1,415
Deliveries, October	1,062	381 =	1,443	1,893	1,204
Stocks, October 31...	144	17 =	161	352	211

	Pará.			England.		
	1912.	1911.	1910.	1912.	1911.	1910.
Stocks, Oct. 31....*tons*	1,420	2,690	860	380	855	1,308
Arrivals, October	3,300	2,990	2,705	710	288	332
Aggregating.....	4,720	5,680	3,565	1,090	1,143	1,640
Deliveries, October ...	2,875	2,205	2,690	850	393	520
Stocks, October 31....	1,845	3,475	875	240	750	1,120

	1912.	1911.	1910.
World's visible supply, October 31....*tons*	3,524	5,887	3,524
Pará receipts, July 1 to October 31.....	8,455	7,950	7,535
Pará receipts of caucho, same dates.....	1,440	1,050	1,800
Afloat from Pará to United States, Oct. 31.	418	530	278
Afloat from Pará to Europe, October 31..	860	780	1,040

WEEKLY MOVEMENT OF LONDON PRICES.

[IN SHILLINGS AND PENCE PER POUND.]

May 3, 1912.....	4/7½	August 16, 1912.....	5/0½
May 10	4/7½	August 23	5/2
May 17	4/7½	August 30	5/1¾
May 24	4/7½	September 6	4/11½
May 31	4/7½	September 13	4/9½
June 7	4/8½	September 20	4/8
June 14	4/10	September 27	4/7
June 21	4/9½	October 4	4/7
June 28	4/7½	October 11	4/7
July 5	4/9	October 18	4/6½
July 12	4/10	October 25	4/6
July 19	4/10	November 1	4/4½
July 26	4/11¾	November 8	4/5
August 2	4/11	November 15	4/5¼
August 9	5/0½	November 22	4/5¼

Liverpool.

WILLIAM WRIGHT & Co. report [November 1]:

Fine Pará.—There has been a shortage of spot rubber, so that prices ruling have not been a fair indication of the market. For delivery, prices have steadily declined, showing a total drop of 4*d.* per pound. Supplies of Brazilian and plantation continue ample, and at present there is every indication of a further decline in values of Pará, which we still maintain will have to assimilate itself to the level of plantation. Closing value: Hard fine spot, 4*s.* 5*d.* [$1.07]; Island, 4*s.* [97 cents].

Receipts for the month, 3,920 tons, including 400 tons Caucho, against 2,620 tons last month and 2,990 tons last year, totalling 10,380 tons, against 8,640 tons last season.

Rubber Stock at Para.

On May 31 the stock had increased, but had receded by June 30; and had again fallen off on July 31. Large sales by the syndicate materially reduced the stock by the end of August, from which point it had slightly increased by September 30. A further increase was shown on October 31.

March 31, 1911.....*tons*	4,214	January 31, 1912....*tons*	3,370
April 30	5,104	February 29	3,240
May 31	5,350	March 31	2,730
June 30	4,545	April 30	2,770
July 31	3,884	May 31	2,995
August 31	3,450	June 30	2,685
September 30	3,102	July 31	2,300
October 31	3,320	August 31	1,355
November 30	3,050	September 30	1,420
December 31	2,675	October 31	1,845

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weight in Pounds.*]

OCTOBER 24.—Bl the *Clement*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Arnold & Zeiss.....	211,900	39,100	74,600	29,400=	355,000
Meyer & Brown	175,700	10,400	19,300	105,700=	311,100
General Rubber Co.....	171,100	26,800	72,100	.....=	270,000
New York Commercial Co..	147,700	24,500	20,800	18,000=	211,000
Henderson & Korn.....	97,700	6,800	31,800	78,500=	214,800
De Lagotellerie & Co.....	44,200	4,000	20,500	.....=	68,700
Robinson & Co.....	28,900	23,400	.....	.....=	52,300
Hagemeyer & Brunn.....	7,200	300	9,200	.....=	16,700
W. R. Grace Co.....	11,200	.....	2,600	.....=	13,800
F. Rosenstern & Co.....	3,100	.....	2,800	.....=	5,900
Total	898,700	135,300	253,700	231,600=	1,519,300

NOVEMBER 4.—By the steamer *Huber*, from Manáos and Pará:

Arnold & Zeiss.....	177,500	39,300	118,300	12,500=	347,600
Henderson & Korn.....	58,500	9,400	38,100	86,800=	192,800
New York Commercial Co..	105,400	18,200	20,300	23,600=	167,500
Meyer & Brown.....	73,600	7,800	33,100	28,500=	143,000
General Rubber Co.....	69,800	15,300	10,400	.....=	95,500
Edward Maurer	24,700	1,400	11,200	.....=	37,300
Robinson & Co.....	18,000	2,200	1,800	6,600=	28,600
De Lagotellerie & Co.....	10,700	1,100	3,300	.....=	15,100
Hagemeyer & Brunn.....	.....	.....	9,200	.....=	9,200
G. Amsinck & Co.....	2,100	.....	1,300	.....=	3,400
Total	540,300	94,700	247,000	158,000=	1,040,000

NOVEMBER 16.—By the steamer *Boniface*, from Manáos and Pará:

Arnold & Zeiss.....	268,400	71,100	177,600	.....=	517,100
New York Commercial Co..	217,400	43,200	107,800	30,300=	398,700
General Rubber Co.....	103,200	20,400	99,100	1,000=	223,700
Henderson & Korn.....	3,200	1,100	46,200	58,500=	109,000
Meyer & Brown.....	55,200	7,700	23,200	27,300=	113,400
Robinson & Co.....	35,600	4,300	900	.....=	40,800
Ed. Maurer	7,900	700	7,900	.....=	16,500
G. Amsinck & Co.....	3,500	.....	2,000	.....=	5,500
Total	694,400	148,500	464,700	117,100=	1,424,700

PARA RUBBER VIA EUROPE.

POUNDS.

OCTOBER 28.—By the *Carmania*=Liverpool:

Arnold & Zeiss (Fine).....	45,000	
Raw Products Co. (Coarse)....	7,000	52,000

OCTOBER 30.—By the *Zeeland*=Antwerp:

L. Blitz (Fine).....	5,500

NOVEMBER 4.—By the *Laconia*=Liverpool:

N. Y. Commercial Co. (Fine)..	13,500	
Arnold & Zeiss (Fine).....	11,000	
A. W. Brunn (Fine).....	4,500	29,000

NOVEMBER 6.—By the *Pennsylvania*=Hamburg:

Ed. Maurer (Fine).....	13,500	
Raw Products Co. (Coarse)....	10,000	
L. Blitz (Fine).....	2,500	26,000

NOVEMBER 6.—By the *Tivives*=Mollendo:

New York Commercial Co. (Fine).....	8,000

NOVEMBER 11.—By the *Caronia*=Liverpool:

Arnold & Zeiss (Fine).....	11,000	
N. Y. Commercial Co. (Fine)..	3,000	
Raw Products Co. (Coarse)....	11,500	
Raw Products Co. (Caucho)...	4,500	30,000

NOVEMBER 11.—By the *Pretoria*=Hamburg:

N. Y. Commercial Co. (Fine)..	11,500	
Arnold & Zeiss (Coarse).....	3,500	15,000

NOVEMBER 13.—By the *Almirante*=Mollendo:

F. Rosenstein Co. (Fine).....	5,500

NOVEMBER 18.—By the *Campania*=Liverpool:

New York Commercial Co. (Fine).....	67,000

NOVEMBER 21.—By the *Panama*=Mollendo:

W. R. Grace & Co. (Fine).....	4,500	
W. R. Grace & Co. (Caucho)...	7,000	11,500

NOVEMBER 22.—By the *Adriatic*=Liverpool:

N. Y. Commercial Co. (Fine)...	15,000	
N. Y. Commercial Co. (Coarse).	15,000	
A. W. Brunn (Fine).....	7,000	37,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

POUNDS.

OCTOBER 24.—By the *Oruba*=Colon:

Brandon & Bros.....	7,500	
G. Amsinck & Co.....	3,500	
A. M. Capen's Sons.....	3,000	
Maitland, Coppell & Co.....	3,000	
R. Castillo & Co.....	2,500	
Kunhardt & Co.....	2,000	
Lanman & Kemp.....	1,500	
Mecke & Co.....	1,000	
Gillespie Bros. & Co.....	1,000	25,000

OCTOBER 25.—By the *Comus*=New Orleans:

Manhattan Rubber Mfg. Co....	8,000	
A. N. Rotholz	2,000	
Eggers & Heinlein	1,500	11,500

OCTOBER 25.—By the *Bayamo*=Tampico:

Continental-Mexican Rubber Co.	*115,000	
New York Commercial Co.....	*70,000	
Charles T. Wilson.....	*22,500	
For Europe	*25,000	*232,500

OCTOBER 25.—By the *Carmania*=Liverpool:

Henderson & Korn.....	9,000

OCTOBER 25.—By the *Monterey*=Frontera:

Harburger & Stack	8,000	
E. Steiger & Co.....	4,500	
Meyer & Brown.....	4,500	
Willard Hawes & Co.....	3,000	
Herman Kluge	1,000	21,000

OCTOBER 28.—By the *Panama*=Colon:

G. Amsinck & Co.....	9,000	
J. Sambrada & Co.....	8,000	
A. N. Rotholz.....	3,500	
Pottsberg Eberling Co.....	3,000	
Hirzel, Feltman & Co.....	3,000	
George A. Alden & Co.....	1,000	27,500

OCTOBER 28.—By the *Frutera*=Honduras:

A. Rosenthal & Sons.....	7,000	
Isaac Brandon & Bros.....	2,500	9,500

OCTOBER 28.—By the *Cincinnati*=Hamburg:

A. Hirsch & Co.....	34,000

OCTOBER 28.—By *El Rio*=Galveston:

Charles T. Wilson.....	*34,000	
Continental-Mexican Co.	*35,000	*69,000

OCTOBER 31.—By the *Prinz August Wilhelm*=Colon:

G. Amsinck & Co.	38,000	
Isaac Brandon & Bros.	12,000	
Mecke & Co.	4,000	
Caballero & Blanco	2,000	
Roldau & Van Sickle	1,000	57,000

NOVEMBER 4.—By the *Eastern Prince*=Bahia:

A. Hirsch & Co.	15,000	
J. H. Rossbach & Bros.	4,500	19,500

NOVEMBER 6.—By the *Minnetonka*=London:

General Rubber Co.		22,500

NOVEMBER 6.—By the *Pennsylvania*=Columbia:

Henderson & Korn		22,500

NOVEMBER 7.—By the *Thames*=Columbia:

A. M. Capen's Sons	5,000	
Pottsberg Eberling Co.	4,500	
Isaac Brandon & Bros.	5,000	
Mecke & Co.	3,500	
G. Amsinck & Co.	2,500	
Hirzel, Feltman & Co.	2,500	
J. Sambrada & Co.	2,500	
Kunhardt & Co.	2,000	
De Lima Cortissoz Co.	1,000	
Gillespie Bros. & Co.	1,000	29,500

NOVEMBER 9.—By the *Colon*=Colon:

Andean Trading Co.	8,000	
G. Amsinck & Co.	5,000	
Wessels, Kulenkampff & Co.	1,000	14,000

NOVEMBER 11.—By the *Cymric*=Liverpool:

Henderson & Korn		3,500

NOVEMBER 11.—By the *Esperanza*=Frontera:

Herman Kluge	5,000	
H. Marquardt & Co.	3,500	
Harburger & Stack	3,000	
E. Steiger & Co.	3,000	
Meyer & Brown	2,000	
W. Loaiza & Co.	1,000	
George A. Alden & Co.	1,000	18,500

NOVEMBER 11.—By the *Antilla*=Tampico:

Continental-Mexican Rubber Co.	*115,000	
Ed. Maurer	*55,000	
New York Commercial Co.	*33,000	
Arnold & Zeiss	*22,000	
For Europe	*50,000	*275,000

NOVEMBER 11.—By the *Camaguey*=Tampico:

Continental-Mexican Rubber Co.	*150,000	
Arnold & Zeiss	*50,000	
New York Commercial Co.	*40,000	*240,000

NOVEMBER 12.—By the *Westerwald*=Columbia:

G. Amsinck & Co.	7,000	
Winter & Smillie	1,000	
Caballero & Blanco	1,000	
R. Castilloa & Co.	1,000	10,000

NOVEMBER 12.—By *El Occidente*=Galveston:

Charles T. Wilson	*34,000	
For Europe	*56,000	*90,000

NOVEMBER 12.—By the *Comus*=New Orleans:

Manhattan Rubber Mfg. Co.	4,500	
Egger & Heinlein	2,000	6,500

NOVEMBER 12.—By the *President Lincoln*=Hamburg:

General Rubber Co.	11,000	
Arnold & Zeiss	5,000	
Ed. Maurer	3,500	19,500

NOVEMBER 13.—By the *Prinz Joachem*=Colon:

G. Amsinck & Co.	5,500	
Pablo Calvet & Co.	2,000	
A. Rosenthal & Sons	1,500	
Gillespie Bros. & Co.	1,000	10,000

NOVEMBER 15.—By the *Mexico*=Frontera:

Charles T. Wilson	9,000	
E. Steiger & Co.	5,500	
Herman Kluge	5,500	
H. Marquardt Co.	4,500	
Laguna Importing Co.	3,000	
Maitland, Coppell & Co.	2,500	
Meyer & Brown	2,500	
G. Amsinck & Co.	2,000	
Harburger & Stack	1,500	36,000

NOVEMBER 18.—By the *Santiago*=Tampico:

Continental-Mexican Rubber Co.	*40,000	
New York Commercial Co.	*34,000	
Ed. Maurer	*15,000	
For Europe	*13,500	*102,500

NOVEMBER 18.—By the *Matansas*=Tampico:

Continental-Mexican Rubber Co.	*65,000	
Ed. Maurer	*45,000	
New York Commercial Co.	*34,000	
Arnold & Zeiss	*25,000	*169,000

NOVEMBER 19.—By *El Mundo*=Galveston:

Continental-Mexican Rubber Co.	*70,000	
Charles T. Wilson	*10,000	*80,000

NOVEMBER 19.—By the *Albingia*=Columbia:

Mecke & Co.	1,500	
G. Amsinck & Co.	1,500	
De Lima Cortissoz & Co.	1,000	4,000

NOVEMBER 20.—By the *Trent*=Columbia:

W. R. Grace & Co.	15,000	
Brandon & Bros.	5,000	
Kunhardt & Co.	4,500	
A. M. Capen's Sons	4,500	
J. Sambrada & Co.	3,500	
Neuss Hesslein & Co.	2,500	
Silas Elias Abdoo	1,000	
A. Held	1,000	37,000

NOVEMBER 21.—By *El Rio*= Galveston:

Charles T. Wilson	*45,000	
Continental-Mexican Rubber Co.	*45,000	*90,000

NOVEMBER 21.—By the *Panama*=Colon:

L. Johnson & Co.	15,000	
G. Amsinck & Co.	11,500	
J. Sambrada & Co.	11,000	
Piza, Nephews Co.	4,000	
Andean Trading Co.	3,500	
Pablo Calvet & Co.	2,500	
American Trading Co.	2,000	
J. H. Thompson	1,000	
Dumarest Bros. Co.	3,500	54,000

NOVEMBER 22.—By *El Dia*=New Orleans:

G. Amsinck & Co.	3,500	
Eggers & Heinlein	3,500	
In transit	7,000	14,000

NOVEMBER 23.—By the *Monterey*=Frontera:

Harburger & Stack	1,500	
E. Steiger & Co.	1,000	
Herman Kluge	1,000	
Mecke & Co.	1,000	
For Europe	4,500	9,000

AFRICAN.

POUNDS.

OCTOBER 28.—By the *Carmania*=Liverpool:

General Rubber Co.	11,500	
James T. Johnstone	8,000	
George A. Alden & Co.	5,500	
Ed. Maurer	4,500	29,500

OCTOBER 28.—By the *Cincinnati*=Hamburg:

Meyer & Brown	90,000	
Ed. Maurer	4,500	
L. Blitz	3,500	
Rubber Trading Co.	2,500	100,500

OCTOBER 29.—By the *Minnewaska*=London:

Charles T. Wilson		11,000

OCTOBER 30.—By the *Niagara*=Havre:

Ed. Maurer		25,000

OCTOBER 30.—By the *Zeeland*=Antwerp:

Meyer & Brown	45,000	
Arnold & Zeiss	11,500	
Robert Badenhop	9,000	
Raw Products Co.	4,500	70,000

NOVEMBER 1.—By the *Corcovado*=Hamburg:

General Rubber Co.	10,000	
Ed. Maurer	9,000	19,000

NOVEMBER 4.—By the *Laconia*=Liverpool:

Robinson & Co.	7,000	
George A. Alden & Co.	3,000	
Henderson & Korn	2,000	12,000

NOVEMBER 6.—By the *Pennsylvania*=Hamburg:

Meyer & Brown	67,000	
Rubber Trading Co.	11,000	
Wallace L. Gough Co.	7,500	
Charles T. Wilson	5,000	
Robert Badenhop	4,500	95,000

NOVEMBER 6.—By the *Finland*=Antwerp:

Robinson & Co.	40,000	
George A. Alden & Co.	17,000	
Robert Badenhop	17,000	74,000

NOVEMBER 11.—By the *St. Paul*=London:

George A. Alden & Co.	5,500	
Arnold & Zeiss	4,500	10,000

NOVEMBER 11.—By the *Caronia*=Liverpool:

Wallace L. Gough Co.	7,000	
Robinson & Co.	3,500	
Earle Brothers	2,500	13,000

NOVEMBER 11.—By the *Pretoria*=Hamburg:

Arnold & Zeiss	30,000	
Ed. Maurer	40,000	
George A. Alden & Co.	40,000	
Rubber Trading Co.	20,000	
Robert Badenhop	4,500	
General Rubber Co.	4,500	
Wallace L. Gough Co.	15,000	
F. Rosenstein & Co.	2,000	156,000

NOVEMBER 11.—By the *Chicago*=Havre:

George A. Alden & Co.	5,500	
Arnold & Zeiss	4,500	10,000

NOVEMBER 12.—By the *President Lincoln*=Hamburg:

Wallace L. Gough Co.	9,000	
Rubber Trading Co.	4,500	
General Rubber Co.	2,000	15,500

NOVEMBER 13.—By the *Vaderland*=Antwerp:

George A. Alden & Co.	165,000	
Henderson & Korn	15,000	180,000

NOVEMBER 15.—By the *Gresham*=Lisbon:

Ed. Maurer	35,000	
Santos & Seguera	34,000	
George A. Alden & Co.	18,000	87,000

NOVEMBER 18.—By the *Baltic*=Liverpool:

Wallace L. Gough Co.	5,500	
James T. Johnstone	4,500	
George A. Alden & Co.	2,500	
General Rubber Co.	2,500	15,000

NOVEMBER 18.—By the *Minneapolis*=London:

Charles T. Wilson		11,500

NOVEMBER 18.—By the *Amerika*=Hamburg:

Ed. Maurer	10,000	
Rubber Trading Co.	2,500	12,500

NOVEMBER 18.—By the *Lapland*=Antwerp:

Meyer & Brown	9,000	
Charles T. Wilson	5,000	
Robert Badenhop	3,500	17,500

NOVEMBER 20.—By the *Oceanic*=London:

Robert Badenhop		11,500

NOVEMBER 22.—By the *Pangalos*=Lisbon:

Ed. Maurer	7,000	
F. Rosenstern Co.	4,500	11,500

NOVEMBER 22.—By the *Patricia*=Hamburg:

George A. Alden & Co.	25,000	
Ed. Maurer	25,000	
Wallace L. Gough Co.	25,000	
Robert Badenhop	11,000	
Meyer & Brown	11,500	
General Rubber Co.	11,500	
Rubber Trading Co.	4,500	113,500

EAST INDIAN.

[*Denotes plantation rubber.]

POUNDS.

OCTOBER 28.—By the *Minnewaska*=London:

New York Commercial Co.	*145,000	
Meyer & Brown	*70,000	
Arnold & Zeiss	*45,000	
Ed. Maurer	*30,000	
Charles T. Wilson	*30,000	
James T. Johnstone	*22,500	
Rubber Trading Co.	*5,000	
Robinson & Co.	*5,000	
Ed. Maurer	5,500	358,000

OCTOBER 29.—By the *Katuna*=Colombo:

Meyer & Brown	*35,000	
New York Commercial Co.	*30,000	
Ed. Maurer	*25,000	
Robert Badenhop	*5,000	
Wallace L. Gough Co.	*4,500	*99,500

OCTOBER 30.—By the *Zeeland*=Antwerp:

Meyer & Brown		*67,000

OCTOBER 31.—By the *Oceanic*=London:

Henderson & Korn	*30,000	
New York Commercial Co.	*34,000	
Ed. Maurer	*25,000	
Meyer & Brown	*22,500	
Charles T. Wilson	*15,000	
Arnold & Zeiss	*11,500	
Arnold & Zeiss (Penang*)	77,000	
In transit	*90,000	305,000

NOVEMBER 1.—By the *Ambria*=Singapore:

Ed. Maurer	*100,000	
L. Littlejohn Co.	*25,000	
New York Commercial Co.	*9,000	
Wallace L. Gough Co.	9,000	143,000

NOVEMBER 1.—By the *Calliope*=Colombo:

New York Commercial Co.	*45,000	
Meyer & Brown	*30,000	
Robert Badenhop	*5,500	
Raw Products Co.	*3,500	
L. Blitz	*2,500	*86,500

NOVEMBER 6.—By the *Minnetonka*=London:

General Rubber Co.	*375,000	
New York Commercial Co.	*70,000	
Meyer & Brown	*17,000	
S. Falke Co.	*34,000	
Charles T. Wilson	*15,000	
Robert Badenhop	*11,000	
Ed. Maurer	*7,000	
James T. Johnstone	*4,500	*533,500

NOVEMBER 6.—By the *Finland*=Antwerp:

Meyer & Brown	*70,000	
Robert Badenhop	*9,000	*29,000

NOVEMBER 6.—By the *Noordam*=Rotterdam:

Meyer & Brown	*27,000	
Rubber Trading Co	*8,000	
Robinson & Co	*7,000	
Raw Products Co	*9,000	*51,000

NOVEMBER 7.—By the *New York*=London:

Arnold & Zeiss	*60,000	
Ed. Maurer	*25,000	
Meyer & Brown	*9,000	*94,000

NOVEMBER 9.—By the *St. Paul*=London:

New York Commercial Co	*35,000	
Ed. Maurer	*8,000	*43,000

NOVEMBER 11.—By the *Mesaba*=London:

Henderson & Korn	*50,000	
Arnold & Zeiss	*45,000	
New York Commercial Co	*35,000	
Meyer & Brown	*25,000	
Ed. Maurer	*15,000	
James T. Johnstone	*13,500	
Rubber Trading Co	*15,000	
Robinson & Co	*13,500	
Robert Badenhop	*11,000	*223,000

NOVEMBER 12.—By the *Ryndam*=Rotterdam:

Manhattan Rubber Mfg. Co		7,000

NOVEMBER 13.—By the *Vaderland*=Antwerp:

Meyer & Brown	*40,000	
Henderson & Korn	*7,000	*47,000

NOVEMBER 14.—By the *Uhenfels=Colombo*:

Meyer & Brown	*85,000	
New York Commercial Co	*80,000	
Ed. Maurer	*11,000	
Raw Products Co	*9,000	
L. Blitz	*5,000	*190,000

NOVEMBER 15.—By the *Invercylde*=Singapore:

General Rubber Co	*34,000	
L. Littlejohn & Co	*33,000	
Ed. Maurer	*56,000	
Wallace L. Gough Co	*13,500	
New York Commercial Co	*5,500	*142,000

NOVEMBER 16.—By the *Marienfels*=Colombo:

Meyer & Brown	*77,000	
New York Commercial Co	*60,000	
Raw Products Co	*7,000	
Robert Badenhop	*7,000	*151,000

NOVEMBER 18.—By the *Lapland*=Antwerp:

Meyer & Brown		*11,500

NOVEMBER 18.—By the *Philadelphia*=London:

New York Commercial Co	*90,000	
Meyer & Brown	*45,000	
Arnold & Zeiss	*35,000	
Charles T. Wilson	*9,000	
In transit	*40,000	*219,000

NOVEMBER 18.—By the *Minneapolis*=London:

General Rubber Co	*415,000	
New York Commercial Co	*135,000	
Arnold & Zeiss	*45,000	
Meyer & Brown	*55,000	
Ed. Maurer	*56,000	
James T. Johnstone	*34,000	
Henderson & Korn	*22,500	
Robert Badenhop	*11,500	
William H. Stiles	*11,000	
Charles T. Wilson	*7,000	
Raw Products Co	*5,000	
In transit	*25,000	*822,000

NOVEMBER 20.—By the *Oceanic*=London:

New York Commercial Co	*70,000	
Robinson & Co	*35,000	
Meyer & Brown	*25,000	
Arnold & Zeiss	*25,000	
Henderson & Korn	*45,000	
Charles T. Wilson	*22,500	
In transit	*80,000	*302,500

NOVEMBER 22.—By the *Patricia*=Hamburg:

Rubber Trading Co		*11,000

BALATA.

	Pounds.	
OCTOBER 29.—By the *Saramaca*=Demerara:		
Ed. Maurer	13,500	
Schutte Bunemann & Co	11,500	
Yglesias Lobo & Co	4,500	
Middleton & Co	2,500	
George A. Alden & Co	2,000	34,000
NOVEMBER 6.—By the *Marowijne*=Trinidad:		
G. Amsinck & Co	4,000	
American Trading Co	1,500	
Gillespie Bros.	1,500	
George A. Alden & Co	1,000	
M. A. De Leon Co	1,000	9,000
NOVEMBER 8.—By the *Maracas*=Trinidad:		
G. Amsinck & Co	15,000	
American Trading Co	11,500	
Schutte Bunemann & Co	7,000	
Ed. Maurer	6,500	
Middleton & Co	4,000	44,000
NOVEMBER 13.—By the *Coppername*=Demerara:		
Gillespie Bros.	2,900	
George A. Alden & Co	1,000	
Wessels, Kulenkampff & Co	1,000	
M. J. Secklen	1,000	5,000

GUTTA-PERCHA.

	Pounds.	
NOVEMBER 15.—By the *Invercylde*=Singapore:		
L. Littlejohn & Co		33,500
NOVEMBER 18.—By the *Amerika*=Hamburg:		
Robert Soltau & Co		22,500

GUTTA-JELUTONG.

	Pounds.	
NOVEMBER 1.—By the *Ambria*=Singapore:		
L. Littlejohn & Co	155,000	
Wallace L. Gough Co	55,000	210,000
NOVEMBER 15.—By the *Invercylde*=Singapore:		
L. Littlejohn & Co	600,000	
Haebler & Co	325,000	
Wallace L. Gough Co	125,000	
George A. Alden & Co	50,000	1,100,000

BOSTON ARRIVALS.

	Pounds.	
OCTOBER 8.—By the *Indrawadi*=Singapore:		
G. A. Alden & Co. (Jelutong)	150,000	
L. Littlejohn & Co. (Jelutong)	780,000	930,000
OCTOBER 10.—By the *Kansas*=Singapore:		
State Rubber Co. (East Indian)	26,000	
L. Littlejohn & Co. (Gutta Percha)	25,000	
State Rubber Co. (Gutta Percha)	22,500	
L. Littlejohn & Co. (Jelutong)	300,000	
State Rubber Co. (Jelutong)	125,000	
George A. Alden & Co. (Jelutong)	135,000	633,500
OCTOBER 15.—By the *Indragara*=Singapore:		
State Rubber Co. (East Indian)	25,000	
L. Littlejohn & Co. (Jelutong)	830,000	
George A. Alden & Co. (Jelutong)	255,000	
State Rubber Co. (Jelutong)	106,000	1,216,000
OCTOBER 17.—By the *Sagamore*=Liverpool:		
George A. Alden & Co. (Africans)	2,600	
For Canada (Africans)	10,000	22,600
OCTOBER 26.—By the *Ambria*=Singapore:		
State Rubber Co. (Gutta Percha)	22,500	
L. Littlejohn & Co. (Gutta Percha)	34,000	
L. Littlejohn & Co. (Jelutong)	215,000	271,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—OCTOBER, 1912.

Imports:	Pounds.	Value.
India-rubber	9,096,981	$7,706,710
Balata	233,671	159,672
Guayule	871,470	372,285
Gutta-percha	21,054	14,118
Gutta-jelutong (Pontianak)	1,812,506	81,039
Total	12,035,682	$8,333,824
Exports:		
India-rubber	91,055	$77,059
Balata	17,023	10,400
Guayule	.....	.....
Gutta-percha	.....	.....
Reclaimed rubber	17,797	3,828
Gutta-jelutong (Pontianak)	.....	.....
Rubber scrap, imported	2,230,838	$179,821
Rubber scrap, exported	447,675	35,998

EXPORTS OF INDIA-RUBBER FROM PARA FOR SEPTEMBER, 1912 (IN KILOGRAMS).

	NEW YORK.					EUROPE.					GRAND
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Zarges, Berringer & Co	21,038	15,423	124,206	31,640	192,307	194,860	21,173	20,135	25,448	261,616	453,923
Ad. H. Alden, Ltd	.....	2,720	28,710	4,200	35,630	55,420	3,060	16,500	2,520	77,500	113,130
General Rubber Co. of Brazil	26,714	3,314	32,341	22,400	84,769	27,513	2,288	50	15,120	44,971	129,740
Suarez, Hermanos & Co., Ltd	116	.....	.....	93	209	9,770	845	5,513	15,041	31,169	31,378
R. O. Ahlers & Co	24,570	2,657	21,316	1,485	50,028	38,499	.....	8,392	17,116	64,007	114,035
De Lagotellerie & Co	9,350	850	9,900	.....	20,100	.....	.....	.....	.....	.....	20,100
Pires Teixeira & Co	11,900	680	3,960	.....	16,540	2,380	340	.....	.....	2,720	19,260
Syndicate J. Marques	.....	.....	111,118	35,311	146,429	.....	.....	.....	.....	.....	146,429
J. Marques	43,353	5,106	40,210	9,202	97,871	32,709	5,601	12,643	1,515	52,468	150,339
Sundry exporters	9,010	680	2,310	560	12,560	.....	.....	.....	.....	.....	12,560
Itacoatiara, direct	.....	.....	.....	.....	.....	7,129	2,344	4,793	.....	14,266	14,266
	146,051	31,430	374,071	104,891	656,443	368,280	35,651	68,026	76,760	548,717	1,205,160
Manáos, direct	389,879	85,380	76,845	24,003	576,107	417,835	80,569	61,535	71,657	631,596	1,207,703
Iquitos, direct	6,297	.....	2,253	510	9,060	38,757	12,163	13,015	25,227	89,162	98,222
Total, September, 1912	542,227	116,810	453,169	129,404	1,241,610	824,872	128,383	142,576	173,644	1,269,475	2,511,085
Total, August, 1912	706,115	141,209	533,033	170,294	1,550,651	771,671	81,869	186,983	167,370	1,207,893	2,758,544
Total, July, 1912	579,011	117,387	324,108	160,593	1,181,099	589,286	58,728	185,106	479,399	1,312,519	2,493,618
Total, January-June, 1912	4,409,232	1,064,132	3,562,570	2,071,223	11,107,157	6,251,126	744,600	1,479,253	3,316,123	11,791.102	22,898,259

EXPORTS OF INDIA-RUBBER FROM MANAOS FOR SEPTEMBER, 1912 (IN KILOGRAMS).

	NEW YORK.					EUROPE.					GRAND
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Zarges, Ohliger & Co	211,012	21,120	53,159	52,002	537,293	232,682	33,600	12,120	29,096	307,498	644,791
Adelbert H. Alden, Ltd	161,216	57,940	27,293	5,682	252,131	58,979	9,861	9,820	.....	78,660	330,791
General Rubber Co. of Brazil	45,346	8,416	9,736	4,266	67,764	86,366	15,848	12,527	35,697	150,438	218,202
Ahlers & Co	54,179	13,092	6,145	12,143	85,559	90,930	12,276	18,477	2,808	124,491	210,050
De Lagotellerie & Co	5,600	640	900	150	7,290	50,578	9,054	10,595	4,051	74,278	81,568
Sundries	.....	300	.....	4,692	4,992	2,661	1,516	3,939	2,584	10,700	15,692
	477,353	101,508	97,233	78,935	755,029	522,196	82,155	67,478	74,236	746,065	1,501,094
De Iquitos, direct	2,205	.....	1,305	3,139	6,649	128,313	7,261	31,603	100,763	267,940	274,389
Total, September, 1912	479,558	101,508	98,538	82,074	761,678	650,509	89,416	99,081	174,999	1,014,005	1,775,683
Total, August, 1912	194,739	34,654	44,691	38,668	312,752	388,198	32,359	60,654	90,698	572,409	885,161
Total, July, 1912	177,787	47,976	46,874	36,951	309,588	131,295	13,120	59,558	216,591	420,564	730,152
Total, January-June, 1912	2,523,525	633,319	1,019,142	860,626	5,036,612	2,791,987	465,094	665,339	2,108,191	6,030,611	11,067,223

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Rubber Scrap Prices.

LATE NEW YORK QUOTATIONS.—Prices paid by consumers for carload lots, per pound—are practically unchanged.

	November 29.
Old rubber boots and shoes—domestic	9¼@ 9⅜
Old rubber boots and shoes—foreign	9¼@ 9⅜
Pneumatic bicycle tires	4¾@ 5
Automobile tires	9¼@ 9⅜
Solid rubber wagon and carriage tires	9¼@ 9½
White trimmed rubber	11 @11½
Heavy black rubber	4¾@ 5
Air brake hose	6 @ 6½
Garden hose	1⅛@ 1½
Fire and large hose	2 @ 2⅛
Matting	⅝@ ¾

Amsterdam.

JOOSTEN & JANSSEN report [November 15]:

The sale today included 27 tons *Hevea* and 11 tons *Ficus* with 1 ton *Castilloa*. For the first valuations were realized, while a fall of 2 per cent. and 4 per cent. was recorded for the others. Generally speaking the tendency was very steady.

Antwerp.

RUBBER STATISTICS FOR OCTOBER.

DETAILS.	1912.	1911.	1910.	1909.	1908.
Stocks, Sept. 30..*kilos*	708,127	435,545	580,980	397,454	654,161
Arrivals in October:					
Congo sorts	209,002	355,970	175,101	199,664	487,104
Other sorts	9,596	26,841	52,709	19,505	54,535
Plantation sorts	105,545	32,452	47,943	46,016	13,117
Aggregating	1,032,270	850,808	856,661	662,639	1,208,917
Sales in October	463,451	272,600	257,887	197,808	546,813
Stocks, October 31	568,819	578,208	598,774	464,831	662,104
Arrivals since Jan. 1:					
Congo sorts	2,658,416	2,706,051	2,525,799	2,858,957	3,583,058
Other sorts	126,934	369,860	314,823	738,441	534,637
Plantation sorts	1,097,623	525,979	464,526	238,940	100,224
Aggregating	3,882,973	3,601,890	3,305,148	3,836,338	4,217,919
Sales since January 1.	3,978,692	3,611,994	3,247,884	3,967,242	4,562,709

RUBBER ARRIVALS FROM THE CONGO.

OCTOBER 15.—By the steamer *Anversville:*

Bunge & Co	(Société Générale Africane)	68,000	
"	(Chemins de fer Grands. Lacs)	2,400	
"		2,100	
Société Coloniale Anversoise	(Haut Congo)	980	
"	(Cie du Lomami)	7,100	
L. & W. Van de Velde	(Cie du Kasai)	96,500	
"	(Comfina)	19,000	
"	(Velde)	1,800	
"		3,500	
Charles Dethier	(American Congo Co.)	8,200	
Comp. d'Irebu		500	
Divers		3,500	213,580

NOVEMBER 5.—By the steamer *Leopoldville:*

Bunge & Co	(Société Générale Africaine) *kilos*	43,200	
do	(Chemins de fer Grands. Lacs)	4,400	
do	(Comptoir Commercial Congolais)	15,600	
do	(Intertropical)	7,200	
do	(Cie du Kasai)	96,000	
Société Coloniale Anversoise	(Lomami)	13,800	
L. & W. Van de Velde	(Comfina)	8,800	
do		4,500	
Willaert Freres		3,000	196,500

Plantation Rubber from the Far East.

EXPORTS OF CEYLON-GROWN RUBBER.

[From January 1 to October 21, 1911 and 1912. Compiled by the Ceylon Chamber of Commerce.]

	1911.	1912.
To Great Britain ..... *pounds*	2,371,465	5,595,634
To United States	1,436,403	3,145,895
To Belgium	544,157	838,322
To Australia	31,990	212,396
To Germany	32,881	140,424
To Austria	3,088	55,351
To Japan	40,762	41,263
To Canada	13,830	16,065
To Italy	4,035	5,909
To Russia	.....	2,288
To Holland	8,413	2,282
To France	117	2,017
To India	85	400
To Norway and Sweden	.....	39
To Africa	35	.....
	4,487,261	10,058,285

[Same period 1910—2,223,341 pounds; same 1909—982,680.]

TOTAL EXPORTS FROM MALAYA.

(From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.)

To	Singapore, Oct. 15.	Penang, Sept. 30.	Port Swettenham Sept. 15	Total.
Great Britain. *pounds*	7,930,678	6,524,141	11,852,574	26,307,393
Continent	283,132	15,063	1,595,865	1,894,060
Japan	382,551	.....	.....	382,551
Australia	76,863	.....	.....	76,863
Ceylon	2,217	197,760	607,332	807,309
United States.....	2,118,789	933	2,081	2,121,803
Total	10,794,230	6,737,897	14,057,852	31,589,979
Same period, 1911..	4,894,601	3,565,100	7,818,674	16,278,375
Same period, 1910..	2,805,158	1,652,782	6,886,394	11,344,334
Same period, 1909..	2,001,428	1,739,291	1,485,210	5,225,929

Rotterdam.

HAVELAAR & DE VRIES report [November 13]:

Yesterday's sale included 14½ tons *Hevea*, 11 tons *Ficus*, and 4 tons Ceara, which averaged slightly under valuations for the 16 tons sold. The whole quantity would have been disposed of but for the reserved attitude of sellers.